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OLDEST AGRICULTURAL AND LIVE STOCK JOURNAL IN THE MISSISSIPPI VALLEY

Sixty-Seventh Year.

ST. LOUIS, MO., JUNE 18, 1914.

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IN THE POULTRY YARD

HOW TO SELECT AND OPERATE AN INCUBATOR.

Users of incubators are given the following suggestions in a new free publication of the Department of Agriculture, entitled "Natural and Artificial Incubation of Hens' Eggs," (Farmers' Bulletin No. 585):

See that the incubator is running steadily at the desired temperature before filling with eggs. Do not add fresh eggs to a tray containing eggs which are undergoing incubation.

Turn the eggs twice daily after the second and until the nineteenth day. Cool the eggs once daily, according to the weather from the seventh to the nineteenth day.

Turn the eggs before caring for the lamps.

Attend to the machine carefully at regular hours.

Keep the lamp and wick clean.

Test the eggs on the seventh and fourteenth days.

Do not open the machine after the eighteenth day until the chickens are hatched.

In setting up and operating an incubator follow the directions of the manufacturer. There are a large number of reliable American-made incubators, but the department cannot recommend any particular kind. It does advise, however, that poultry raisers select an incubator that has already given satisfaction in the vicinity where it is to be used. As the cost of the machine is small compared with the eggs it hatches, it is a good investment to get a well-constructed incubator instead of a cheap one, which requires more attention and wears out quicker. The equipment of most incubators is so subject to change that particular lamps, regulators, etc., cannot be recommended. The lamp, however, should have a bowl large enough to hold enough oil to burn 36 hours under average weather conditions, should be easy to remove and replace, should set absolutely tight in position, and be at a convenient height.

Incubators Holding More Eggs Preferable.

An incubator holding 60 eggs calls for as much time and care as one holding 360, and for ordinary use, a machine of at least 150 egg capacity seems most satisfactory. On those large farms that use individual-lamp incubators, the machine usually holds from 300 to 400 eggs, and a small machine is sometimes used for a preliminary test, the eggs being transferred to the large incubator after the first or second test. Large machines cost less in proportion to the number of eggs they hold than smaller ones. However, smaller machines are valuable under special conditions, as for preliminary testing.

Chickens are more even in size when they are all hatched within a short time of each other than when the incubating period is extended over many weeks. Many poultrymen, therefore, believe that it pays to have an incubator large enough to hatch most of their stock in two, or at most, three hatches. Much time in tending to the incubators and brooders is saved in this way. A fair estimate for a poultry farm is to have the incubator hold as many eggs as there are hens, provided that about one-half of the flock is to be renewed yearly and no outside hatching is carried on.

Well-Ventilated Room for Incubator.

A well-ventilated room, which is not subject to great variations in temperature, should be selected for the incubator. If built above ground, the wall should be double and the entire building insulated. In sections that have a mild climate, machines may be operated in buildings with single walls, but a well-insulated room is always preferable.

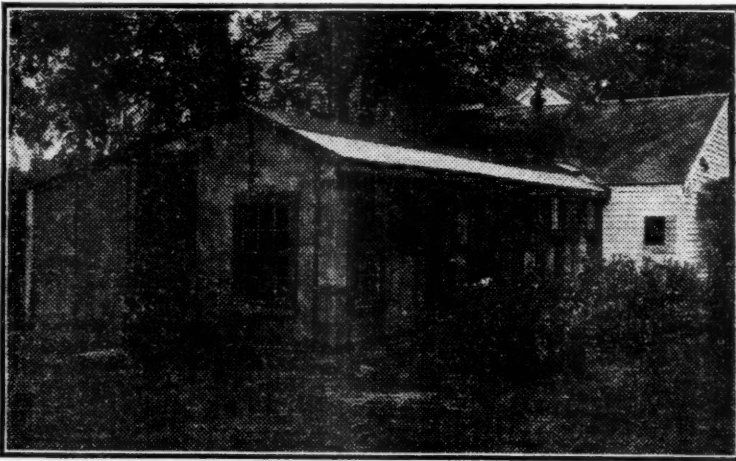
Where only a few small machines are used they are generally run in a room or cellar of the house. Good results in hatching may be secured in cellars as well as in rooms, and these are more commonly used. Many of these cellars are provided with some system of ventilation beside windows, muslin screens on the windows often



providing good ventilation without draft, and keeping the sun from shining on the machines. Cement floors are easier to keep clean than dirt floors. Where the equipment is extensive, a special cellar or house should be provided.

How to Operate a Machine.

In setting up the machine, get it perfectly level. Do not plane off the door if it sticks, until the machine has been heated up and thoroughly dried. Run the machine at about 102 F. for a day before putting in the eggs. Afterwards do not touch the regulator for several hours as it takes this time for the ma-



THE REBUILT CHICKEN HOUSE

chine to come back to its regular temperature.

The temperature should remain nearly even. When the bulb of the thermometer rests directly on the eggs the temperature is usually held at 101½ to 102 degrees F. the first week, 102 to 103 degrees F. the second week, and 103 degrees F. the last week; while a hanging thermometer is operated at about 102 to 102½ degrees F. the first two weeks, and 103 degrees F. the last week.

The eggs tend to throw off more heat as they develop, so that occasionally the regulator needs to be changed slightly, but it should not be changed any more than is absolutely necessary. The temperature of the egg chamber may be lowered by lowering the flame of the lamp in the middle of the day. Regulate the incubator before opening the door to tend to the eggs. Most operators tend to their machines two or three times daily.

Causes of Poor Hatches.

The cause of poor hatches is a much discussed question, which depends on a great variety of circumstances. A poor hatch is more apt to be due to the condition of the eggs previous to hatching than to incubation, although improper handling of either factor will produce the same results. When eggs fail to hatch, see whether the breeding stock is kept under conditions which tend to produce strong, fertile germs in the eggs, if the eggs have been handled properly before incubation, and whether the conditions were right during incubation, as judged by the time of the hatch.

A daily temperature record should be kept of each machine. The operator can thus compare the temperature at which the machines have been kept, which may prove valuable in the future work, especially if the brooder records can be checked back against those of the incubator.

Every poultry raiser who contemplates setting up an incubator is advised to write for the new bulletin, to the United States Department of Agriculture, Washington, D. C. Among other details it has paragraphs on moist-

ure and ventilation, testing eggs, and disinfecting and storing incubators.

SAVE EGG LOSSES DURING HOT WEATHER.

By H. L. Kempster.

Statistics show that during the summer months from one-fourth to over one-half the eggs produced in Missouri are a total or partial loss.

Heat is directly or indirectly responsible for a loss to Missouri farmers of two and one-half million dollars worth of eggs annually. Heat causes germ growth, embryo and mould development, increases evaporation and causes eggs to become bad in a very short time. April eggs are high in quality because of the lower temperature which prevails at that time.

According to studies made at the Missouri College of Agriculture nearly all of the loss in eggs due to heat can be avoided by the ordinary conveniences

that the average farm provides. If farmers would take the same care of eggs that they do of butter before and during the time it is taken to market, there would be practically no loss from heat. Any temperature above 70 degrees is too warm. Even under the best of conditions eggs should be taken to market at least once each week.

Eggs should be collected daily and should be cooled as quickly as possible. A sweet, fresh basement which is cool or a cyclone cellar makes a satisfactory place to store eggs. They may also be kept cool by placing them in a bucket lowered into a well. Avoid storing them in musty basements and keep them away from flies.

If these directions are followed and eggs are carefully protected from heat while being taken to market, the value of Missouri's egg crop may be increased two and one-half million dollars during the next four months.

A SANCTUARY FOR WILD DUCKS

Since the conservation movement has reached the wild duck in his native haunts, this city promises to add a few millions of ducks to its shore features. The idea is to make the lake above the Keokuk dam specially attractive to the ducks.

The water-power installed here in the Mississippi river conserves many million tons of coal every year; conserves the fruit crop along the shores of its lake; conserves navigation to the extent of over 60 miles of deep water navigation and millions of dollars to the war department; is conserving many square miles of low land always overflowed during high water stages; and now the society attending to the conservation of game birds is planning to utilize it for the special good of the wild ducks.

Congress has already made it unlawful to shoot ducks on the upper Mississippi river at any time. Game wardens enforce the law strictly. Hunters who formerly dined on mallards now watch immense flocks of ducks fly over the water of the Mississippi while the double barreled shotgun gathers dust in the attic.

Prominent members of the society which accomplished all this have passed along the shores of the lake above the Keokuk dam. It is a lake of a hundred square miles area. The duck conservationists quickly saw its capabilities as a summer resort for wild ducks. For one thing it would save the ducks a journey of several hundred miles to their present feeding grounds in Wisconsin and Minnesota.

The plan now under way is to sow wild rice and other duck food in all the shallow waters along the shores of the lake in the Mississippi here. The lake shore generally shelves off quickly into deep water but there are several thousand scattered acres available for duck pastures. If the United States, or the states of Iowa and Illinois, will sow this acreage to wild rice, it is believed that the lake will be fairly alive with wild ducks during the springs and summers. Local hunters object to the plan. They do not want to be tantalized by a million wild ducks in sight from a bluff with the shotgun in the attic.

The United States government has given a good deal of attention to utilizing the lake created above the big Keokuk dam. Some millions of young bass have been placed there under especially favorable conditions. Recent official reports say Illinois is already the second state in the Union in the value of its fishing industry and it is believed that the lake created by the Keokuk dam will greatly increase its output of fish. Iowa also will benefit in this respect.

The lake which covers with many feet of water the formerly impassable Des Moines rapids in the Mississippi has its surface kept nearly at a constant height, lessening flood variations and making easy the construction of terminal docks for its cities which formerly was almost impossible.



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CREAM of the DAIRY NEWS



The test of a cow's milk is influenced but little by the kind of feed. Take the common cows, for example, and their test on an average throughout the state is about 3.8 per cent fat. Common cows kept at state experiment stations test practically the same. A cow's test is very much the same as her size or color—a characteristic that can be changed but little by feed. A cow well fed will produce more milk and therefore produce more butterfat, but her test will be practically the same.

Begin to break in the heifer for future milking when she is 12 months old, by getting her in with the cows. Stanchion her and put a nice feed of grain and silage or hay in her box, the same as if she was one of the herd. Of course, this is a bother, but it will pay. When you stanchion her, take a little time to pet her and brush her down. Do this every time you let her in and out of the stable. After a while, when she shows no fear of being caressed, run your hand down over her udder. If she kicks it will only be natural. But after awhile she will forget all about it and you will have her so well trained that you can sit down and milk her as safely when she freshens as if she were one of the older cows.

It is difficult to estimate the amount of grain most advisable to feed dairy cows. Generally speaking cows weighing between 500 and 700 pounds giving milk testing 5 per cent, are fed one pound of grain for three and one-half pounds of milk. This is merely a guide however. The feeder can determine the amount to give very accurately by weighing both the milk and the daily grain ration, increasing the latter at the rate of one-half pound every other day so long as the individual cow responds with an increase in milk flow sufficiently large to pay for the additional grain. This requires some extra work, but will prove to be the most profitable labor connected with the feeding of cows, both from the standpoint of large and economical production and the healthfulness of the cow.

An important point in selecting dairy cows is their ability to convert large quantities of farm grown roughage into milk and butterfat. Cows that do not have great digestive capacity or that have been improperly developed upon too much grain and highly concentrated commercial feedstuffs cannot economically convert large quantities of these farm grown feeds into dairy products. In buying new cows for the dairy one should buy of dairy farmers who practice rational methods of feeding, preferably from those who do not feed too much grain and rich concentrates. Many cows have been fed so much grain that they have lost their capacity for handling home-grown roughage. Such cows are no longer profitable dairy producers and should be avoided when buying new cows for the dairy.

MAKING BUTTER ON THE FARM.

Butter making on the farm is commonly done in the kitchen in the winter time, and at irregular intervals. The cream is usually collected in small lots from day to day and held until a sufficient quantity is on hand to churn. This method is quite frequently attended with many difficult churning that vex the experienced buttermaker.

Under such circumstances, one of the first kinks met with in churning is the condition of the cream. It may be too thick, which makes it very sticky; or too thin, in which condition the fat globules are so far apart that they gather with considerable difficulty. If the cream is separated so it will contain from 25 to 30 per cent of butter fat, it should be in good condition to churn rapidly.

Another common kink is low churning temperature. In the summer time,

when the churn, the cream, and the surroundings are warm, the cream will churn with little difficulty at about 54 degrees, but in the winter time when these conditions are all reversed it may require a temperature of 62 degrees or more to get results. The particles of butter fat have to be in a plastic condition in order to collect in the churn. If the temperature is too low the fat globules may strike one another several times before sticking to each other, thus prolonging the churning. A dairy thermometer is an actual necessity in every home where cream is handled. Guessing at temperatures is certainly out of date where butter is worth 20 cents per pound.

Kink No. 3. Cream does not sour so readily in the winter time owing to the low temperature, so it is often too sweet when put into the churn. Sweet cream is extremely viscous or sticky, so does not release the fat readily during the process of churning. The remedy in this case is to set the cream in a warm place where it may be kept at a uniform temperature of 70 degrees F., or room temperature, until it becomes rather sour to the taste before it is put into the churn.

A fourth kink is found in the butter fat itself. Butter fat is composed of several fats varying in degree of hardness, also in relative amounts. In the summer time when the cows have plenty of green succulent grass the soft fats are present in comparatively large amounts. In the winter time when the cow is on dry hay and grain feed just the reverse is true—the hard fats being relatively high. To overcome this kink in churning the cream feed the cow on corn silage or root crops to supply the necessary succulence in her feed so as to keep the proper balance between the hard and the soft fat in her milk.

Kink No. 5. Occasionally difficult churning may be traced to some cow that is well along in her lactation period and about ready to be dried off. Advance in lactation period frequently results in reducing the amount of soft fats and increasing the hard fats. It may also be attended by a material reduction in the size of the fat globules. On account of the small size and firmness they do not readily adhere to one another during agitation. A good remedy is to raise the churning temperature of the cream. This softens the fat globules besides rendering the cream less viscous so the fat globules are more readily released.

The last kink is in the way the churn is filled. Under no conditions should the churn be filled more than half full and with small churns one-third full is sufficient. The butter fat globules are brought together during the agitation and unless there is room left in the churn the concussion or force with which the globules strike on another will not be sufficient to

cause the particles to cling together.

The best way to avoid kinks in churning is to locate the cause as quickly as possible, then supply the proper remedy.—G. L. Martin, North Dakota Experiment Station.

ALFALFA STARTERS.

Every buttermaker understands the necessity of introducing into the cream for each day's churning the right kind of bacteria to bring about the proper acidity in the cream and flavor and aroma in the butter. The starter is made by introducing the proper bacteria into sterilized sour milk. When introduced into the sour milk, these bacteria develop rapidly and at the proper time the starter is mixed with the cream. No buttermaker would think of relying on the various kinds of bacteria that are in the cream to bring about the proper changes. In order to make a uniformly good product he must have the conditions under his control. He takes no chances. Every man who makes a seeding of alfalfa during the spring or summer of 1914 wants the highest success with his crop right from the start. What the essentials for success are has been determined. Is it not wise to make use of the experience of others, rather than going ahead without looking up the matter beforehand?

Alfalfa bacteria are absolutely essential to the best success of the alfalfa plant. One or more men in every community should take it upon themselves this spring to make alfalfa starters, so that the proper bacteria may be had in every community during June and July of this year and throughout next year and the years following. With small patches of alfalfa bearing these bacteria, the soil for inoculating other fields will be near at hand and the use of soil for inoculating purposes will be more general. To make an alfalfa starter this year use one pound of soil from an old alfalfa field and one or two ounces of alfalfa seed mixed thoroughly and sown on a square rod of garden soil that has been well prepared. This will provide soil containing an abundance of bacteria for more than one hundred acres in June or July of this year, or in seasons that follow. This soil from a patch like this can be used to a depth of eight or ten inches. Securing the proper soil for a square rod is easy. It can be sent by mail and the expense is almost nothing. A half-acre or an acre field is better than a small patch, but where one can start an acre field, a thousand can start a square rod of alfalfa properly inoculated. Fifteen or twenty thousand men in Minnesota should make alfalfa starters this spring. Get in touch with your county agent. He will be able to tell you where to get soil containing the alfalfa bacteria. Secure from him a pound of soil and an ounce of seed and make an alfalfa starter this spring.

This and other alfalfa problems will be found more fully discussed in a new bulletin called "Alfalfa Growing in Minnesota."—A. C. Arny, Assistant in Field Crops, University Farm, St. Paul.

DAIRY COW RATIONS.

Press Bulletin 40 of the Nebraska station contains the following brief and simple rules to aid dairy farmers in determining the amount of feed required by each cow:

- 1—Feed all the roughage, such as alfalfa and corn silage, the cow will eat up clean.
- 2—Feed approximately one pound of grain for every three pounds of milk produced per day.
- 3—Give the cows as much feed as they will consume without gaining in weight.
- 4—Feed some succulent feed, such as corn silage or roots, to make the ration more palatable.
- 5—Be prepared to supplement the pastures by feeding silage when the dry season sets in.

NATURE OF MILK.

Milk in almost any form is a nitrogenous or growth-producing feed. When the butterfat is removed, it becomes a feed that contains a still greater per cent. of nitrogen and contains, therefore, still greater growth-producing nutriment, but less of the nutrient that produce fat, and energy.

It is as bad to feed too much growing feed as it is bad to feed too much fattening feed. Consequently feeding milk exclusively is not economical, because too much is required for the pounds of pork produced. By feeding grain with it, a pound of milk becomes more effective and therefore more valuable than when fed alone.

NECESSARY ORGANS.


Since milk is secreted in the cow's udder from blood that passes through it, three points should be considered in buying a dairy cow, namely, a girth to give room for a large pumping apparatus, the heart; large veins beneath the body leading back to the heart from the udder, to return blood from which milk has been secreted; this large vein, sometimes called the milk vein, indicates a large artery carrying blood to the udder; and third, large nostrils and depth of lungs which assure a rapid purifying of the blood. No quantity of milk could be produced if there were not a large food receptacle, so the dairy cow has need of a large mouth and a good-sized paunch in which to store food.

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Cattle

TEXAS OR TICK FEVER OF CATTLE.

A Disease Spread by Ticks Only—Tick Eradication the Remedy.

Texas or tick fever, a disease of cattle which is spread only by ticks, is described in a bulletin just issued by the United States Department of Agriculture, Farmers' Bulletin No. 569. This disease has existed for many years in the southern part of the United States, and besides causing heavy losses has stood in the way of raising better cattle in that section, says Progressive Farmer.

The name "Texas fever," although the term most commonly in use in this country, is somewhat misleading, as it is likely to give the impression that the disease is confined to the state of Texas. Probably the most appropriate name is "tick fever." Among other names in use are Southern cattle fever, red water, black water, distemper, acclimation fever, murrain, splenic or splenetic fever, and bovine malaria.

For a long time the cause of Texas fever remained a mystery, but this was cleared up by the investigations of scientists in the Bureau of Animal Industry about 1890. This work showed conclusively that the disease is caused by a minute parasite living within the blood cells of the cattle, and that the intermediate stage of development of this parasite occurs in a certain species of cattle tick (*Margaropus annulatus*), thus making this tick the indirect but absolutely essential factor in the natural production of the disease. This discovery established a new principle in medical science which has since been found to apply to a number of diseases transmitted by insects, notably yellow fever and malaria which are carried by certain kinds of mosquitoes.

After the minute Texas-fever parasite enters the blood of a susceptible animal by means of the bite of the tick, it attacks the red corpuscles, causing them to break down. The disease is characterized by high fever, destruction of red corpuscles and consequent passing of coloring matter of the blood by the kidneys, causing a reddish discoloration of the urine; by enlarged spleen, engorged liver, more or less jaundice, and emaciation. Death follows in from 10 per cent of the chronic to 90 per cent of the acute cases.

A peculiarity of the disease is that the animals responsible for its spread do not show outward signs of the disease, although they do contain the parasite in their blood. This is because they have become immune through infection early in life, with perhaps a mild attack of the disease. Although such cattle may be apparently healthy, the parasites persist in their blood for many years, ready at any time to start the disease when they are transferred to susceptible cattle by ticks. This phase of the disease has made it hard for many southern cattle owners to understand why their animals, which seem to be perfectly healthy, should be regarded as dangerous to others and subjected to quarantine. Cattle of this kind are somewhat similar to the class of ty-

phoid carriers known as "Typhoid Marys," so called after the famous case of a cook in a New York restaurant, who, after recovering from typhoid fever and apparently regaining perfect health, continued to harbor and distribute the germs of typhoid fever and was the source of 78 other known cases.

Texas fever appears in two distinct types, the acute and the chronic, depending upon the time of the year and the susceptibility of the animals. In the acute form death may occur within three or four days, or the animal may recover, but recovery is usually slow. The chronic form is milder, and while the animal may become greatly emaciated, death is infrequent.

Some Texas fever is spread only through the bite of the cattle tick, it follows that by exterminating the ticks the disease can be eradicated. A knowledge of the habits and life history of the ticks is therefore essential to the control of the disease. When the mature female tick, attached to an animal and engorged with blood, is ready to lay eggs, she loosens her hold and drops to the ground. She may lie quietly for several days before depositing her eggs, which may consume from four to eight days in summer and two weeks or even longer in the fall. The number of eggs laid by a fully developed female varies from 1,500 to 3,000. After laying is finished the female is small and shriveled up, and, having fulfilled her mission, soon dies. From the eggs the larvae or seed ticks are hatched after a period which varies from 13 days to six weeks, depending on conditions of temperature, moisture, soil, etc. The young ticks crawl about on the ground and among the leaves, bunching in large numbers on grass blades, shrubs, weeds, and fence posts, to await an opportunity to get upon passing cattle, or, in some cases, horses.

The disease is not conveyed by the same tick biting an infected animal and then biting another animal, for this does not occur. The mother tick draws the blood of an infected animal, and the blood parasites are transmitted through the eggs to her offspring, and the latter convey them to the blood of the animals which they bite. The infection is thus carried from one animal to another through two generations of ticks.

While the power of transmitting Texas fever is undoubtedly the most dangerous property of the cattle tick, these ticks are also very harmful in other ways. The continuous sucking of the blood by the enormous number of ticks found on some cattle is a heavy drain upon the circulation and brings about an impoverished condition. Infested cattle require more feed, as they must supply nourishment to the ticks as well as to themselves. The ticks retard growth and prevent development of young animals. They also greatly reduce the milk production of cows. The hides from ticky cattle are impaired in value and bring a lower price on the market. The losses chargeable to the cattle ticks for these various items are estimated at more than \$40,000,000 a year, and it is also estimated that the presence of ticks lowers the assets of the South by an additional \$23,250,000.

The region infested with Texas fever was located in 1885, and in 1891 a quarantine line was established. Since the latter year the federal government has maintained a quarantine against cattle from the tick-infested region and has allowed them to be shipped to northern markets only by rail for immediate slaughter under certain restrictions which lower their selling price. The ticks may be destroyed by various methods, such as dipping or spraying the cattle with certain preparations, or transferring the cattle from one inclosure to another so as to get rid of the ticks that are on them and prevent the development of new generations. The most effective method, however, and the one most widely used, is to dip the cattle in a solution of arsenic.

SUPERNUMERARY TEATS.

It is thought best not to breed from a heifer that has supernumerary teats, as the tendency to this condition is hereditary. It may also come from

the sire's side of the family. The teats may be amputated by an expert and the secreting grand obliterated by cauterization. If one can not have this done by an expert, ligation of the teats, as if they were warts, may be done, but it is attended by some danger.

CARE WILL PREVENT BLOAT IN CATTLE.

With the coming of summer and large quantities of succulent, green forage, such as alfalfa and clover, there is much danger of bloat seriously affecting and even killing cattle. This trouble can largely be avoided by proper care and management, says Dr. A. S. Alexander, of the College of Agriculture, University of Wisconsin.

Bloat is due to indigestion causing fermentation in the paunch of the cow, so the change from dry hay to fresh forage should be made gradually. At first the cattle should be allowed to remain on green feed but a short time, and the usual quantities of dry hay and fodder should be fed before pasturing. It is considered dangerous to turn cattle on rank, green feed when the weather is muggy, and the air is moisture laden and charged with electricity.

Equal parts of salt and slaked lime, placed where cattle can have free access to it, is recommended as being likely to reduce the chances of bloat. During the season of danger from bloat it is well to visit the herd at pasture frequently during the day so that instant help may be given.

Two ounces of turpentine administered in a quart of warm, new milk or in a pint of raw linseed oil, is good for a bloated cow, and if necessary, may be repeated in an hour. When all signs of bloat have disappeared, a physic should be given, providing no oil has been previously administered to the cow.

HEIFER REARING.

Nobody else has so many natural advantages as the dairyman for raising good heifers, and nobody else has the dairyman's interest in or is likely to succeed so well at it. That it is not more generally done is one of the vital errors in the dairying industry, one largely responsible for the poor

or very ordinary results too frequently obtained on dairy farms.

THE DAIRY COW.

A cow gives an indication of her ability by the shape and condition of her udder. Here is the object of her existence. This cow lives, moves and has being for the sake of this organ. She is worth but little for anything else; she is bred for this purpose. She is a mother. The man who bred her did so with the object that she would be a little better mother than her mother.

This cow possesses the nervous temperament and shows it in her build; she has a lean head, long from the eye to the brain. She is an active animal. She shows a full eye, and that causes a hollow in the face, a dish face. There is an alert and keen expression in her eyes. That indicates her temperament.

Milk is evolved from the blood, the blood is affected by the breath, and so she should have large, open nostrils. She should be long in the head, because the brain supports the whole nervous system, and this udder is the final answer to the long chain of nervous machinery. The brain is the battery which operates all the time to keep this nervous machinery running.

When the nervous system grows weak it is an indication that the brain action is weak. From the brain go all the nerves of the body. The cow should show a strong back. The first thing to look for in a butter cow is a very strong expression of the backbone, as a large backbone indicates a large spine; the large spine indicates a strong nervous channel from the brain. Such a cow has a powerful nervous machinery.

Feed dairy rations. Bran, cottonseed meal, or linseed meal, or some other protein food. Peas are a good feed for dairy cows. Two pounds of pea meal are the equivalent of six pounds of ordinary bran. Any good farmer should grow 25 to 40 bushels of peas to the acre.

They must be planted deeply, not sown on the ground and dragged in. Forty bushels of peas to the acre are about equivalent to \$70 worth of bran. Peas should be sown twice as thick as the ordinary farmer generally sows, from two to three and a half bushels to the acre.

Missouri County Fairs

Andrew, Bolckow Fair Ass'n., Bolckow, W. W. Craig, Sec.....	Aug. 25-27
Audrain, Mexico Fair Ass'n., Mexico, E. H. Carter, Sec.....	Aug. 11-14
Bates, Bates Co. Fair, Butler, C. E. Robbins, Sec.....	Sept. 8-11
Bone, Boone Co. Agr. & Mec. Soc., Columbia, B. E. Hatton, Sec.....	July 28-31
Boone, Sturgeon Fair Ass'n., Sturgeon, Sam Spelman, Sec.....	Aug. 4-7
Buchanan, Buchanan Co. Agr. & Mec. Soc., Easton, J. P. Sweeney, Sec.....	Sept. 2-5
Buchanan, Interstate Fair & L. S. Show, St. Joseph, H. L. Cook, Sec.....	Aug. 20-25
Callaway, Callaway Co. Fair, Bloomfield, S. D. Waggoner, Sec.....	Aug. 18-20
Cape Girardeau, Cape Girardeau County Fair & Park Ass'n.,	
Cape Girardeau, J. T. Nunn, Jr., Sec.....	Sept. 30-Oct. 3
Chariton, Prairie Hill Fair, Prairie Hill, C. Z. Sears, Sec.....	Sept. 8-9
Clark, Clark Co. Agr. & Mec. Ass'n., Kahoka, P. J. Wilsey, Sec.....	Aug. 25-28
Clinton, Plattsburg Fair Ass'n., Plattsburg, Geo. O. Bryan, Sec.....	Oct. 7-9
Cole, Centertown Live Stock Show, Centertown, R. S. Hathorn, Sec.....	
Cooper, Bunco Fair, Bunco, E. O. Nelson, Sec.....	Aug. 25-28
Crawford, Crawford Co. Fair Ass'n., Cuba, I. C. Walker, Sec.....	Sept. 8-11
Dade, Dade Co. Agr. & Mec. Soc., Lockwood, Dr. R. A. Frye, Sec.....	Sept. 29-Oct. 2
Davies, Pottawamie Fair Ass'n., Pottawamie, R. E. Maupin, Sec.....	Aug. 25-28
DeKalb, DeKalb Co. Agr. & L. S. Exhibit, Maysville, E. A. Hofstatter, Sec.....	Sept. 2-5
Franklin, Franklin Co. Fair, Washington, H. H. Thias, Sec.....	Sept. 10-12
Gasconade, Gasconade Co. Agr. Ass'n., Hermann, L. Haberstock, Sec.....	Aug. 28-30
Grundy, Grundy Co. Fair Ass'n., Trenton, A. T. Cornwell, Sec.....	Sept. 1-4
Green, Driving Park Fair, Springfield, Jesse M. Cain, Sec.....	Oct. 6-10
Hickory, Hickory Co. Fair, Hermitage, U. E. Wilson, Sec.....	Aug. 25-28
Howard, Howard Co. Fair Ass'n., Fayette, Jasper Thompson, Sec.....	Sept. 8-11
Holt, Nodaway Valley Agr. Fair Ass'n., Maitland, G. F. DeBord, Sec.....	Aug. 18-21
Jackson, Independence Fair, Independence, W. H. Johnson, Sec.....	Sept. 1-4
Jasper, Jasper Co. Fair, Carthage, Miss E. R. Knell, Sec.....	Aug. 11-14
Jefferson, DeSoto L. S. Agr. & Hort. Ass'n., DeSoto, C. J. Davidson, Sec.....	Sept. 22-25
Johnson, Chilhowee Annual Cattle Show, Chilhowee, D. L. Albin, Sec.....	
Knox, Knox City Agr. & Mec. Fair Ass'n., Knox City, A. Schenk, Sec.....	Aug. 11-14
Knox, Knox, Lewis & Shelby Co. Fair, Newark, W. A. Henderson, Sec.....	Sept. 1-4
Lewis, Lewis Co. Agr. & Mec. Fair Ass'n., Monticello, J. A. West, Sec.....	Oct. 6-9
Lincoln, Lincoln Co. Fair, Troy, O. D. Bradley, Sec.....	Aug. 25-28
Linn, Linn Co. Fair, Brookfield, L. M. Rummel, Sec.....	Aug. 11-14
Livingston, Chillicothe Fair Co., Chillicothe, A. M. Shelton, Sec.....	Aug. 4-9
Macon, Callao Fair Ass'n., Callao, E. G. Jones, Sec.....	Sept. 15-17
Macon, New Cambria Fair Ass'n., New Cambria, W. E. Howell, Sec.....	Sept. 9-12
Marion, Marion Co. Fair, Palmyra, G. E. Thompson, Sec.....	Sept. 2-5
Moniteau, Moniteau Co. Fair Ass'n., California, L. B. Meyer, Sec.....	Sept. 1-4
Monroe, Monroe City Fair Ass'n., Monroe City, E. J. Alexander, Sec.....	Aug. 18-21
Monroe, Monroe Co. Fair Ass'n., Paris, Penn. Brace, Sec.....	Sept. 1-4
Montgomery, Montgomery Co. Agr. & Mec. Soc.,	
Montgomery City, Geo. R. McVey, Sec.....	Sept. 15-18
Osage, Osage Co. Fair Ass'n., Linn, L. M. Luckenheff, Sec.....	Sept. 1-4
Phelps, Phelps Co. Agr. & Mec. Soc., Rolla, W. T. Denison, Sec.....	Sept. 15-18
Pike, Pike Co. Fair Ass'n., Bowling Green, H. M. Strother, Sec.....	Aug. 15-18
Platte, Platte Co. Agr. & Mec. Soc., Platte City, G. C. Johnson, Sec.....	Sept. 2-5
Polk, Polk Co. Agr. & Mec. Soc., Bolivar, W. U. Townsend, Sec.....	Sept. 1-5
Ralls, Ralls Co. Fair, New London, J. R. Rice, Sec.....	
Randolph, Clark Fair Ass'n., Clark, R. R. Correll, Sec.....	Sept. 2-5
Randolph, Randolph Agr. & Mec. Soc., Jackson, Geo. W. Butler, Sec.....	Aug. 25-27
Randolph, Moberly Agr. Fair Ass'n., Moberly, J. T. Hogg, Sec.....	July 28-31
Saline, Saline Agr. Fair Ass'n., Marshall, E. W. Brown, Sec.....	Aug. 25-28
Scotland, Scotland Co. Fair, Memphis, J. R. Hudson, Sec.....	Sept. 2-5
Scott, Tri-County Fair, Elkton, H. A. Smith, Sec.....	Sept. 22-26
Shannon, Shannon Co. Agr. & M. S., Birch Tree, S. S. Whitlock, Sec.....	Sept. 30-Oct. 3
Shelby, Shelby Co. Agr. & Mec. Soc., Shelby, W. H. Gillespie, Sec.....	Aug. 18-21
Sullivan, Green City Fair Ass'n., Green City, A. E. Jones, Sec.....	Aug. 18-21
Sullivan, Sullivan Tri-Co. Fair Ass'n., Sullivan, S. H. Sullivan, Jr., Sec.....	Aug. 25-28
St. Louis, St. Louis Co. Fair Ass'n.,	
Upper Creve Coeur Lake, Geo. B. Bowles, Sec.....	Sept. 17-20
Warren, Warren Co. Fair, Wright City, Wm. Heidtman, Sec.....	Sept. 22-25
Wright, Third Annual Agr. & Stock Show, Mansfield, Ernest Coday, Sec.....	Oct. 15-17

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Horticulture

WHITE PINES MENACED.

Department of Agriculture Urges Owners to Destroy All Trees Affected by Blister Rust.

The white pine blister rust has such dangerous possibilities for the native white pine forests of the East that the United States Department of Agriculture recommends earnestly that all trees found affected by this disease be destroyed at once. The disease is most conspicuous during the month of May, and it is recommended that the owners of all white pines which are not definitely known to have grown from seed in their present location make a thorough search of their white pines for this disease. The latter part of May will be the best time to search for it in Northern New England and New York, while the first half of May will be best for Southern New England and New York and farther south.

The disease appears upon white pines in most localities during the month of May in the form of yellow blisters breaking through the bark of the main stem near the ground. These blisters, after a few days, break open and give forth great numbers of dusty, orange-yellow spores. In rare cases it occurs well up on the trunk of trees which are 20 to 25 years of age. A very similar disease occurs at about the same time upon the pitch pine, but it should not be confused with the white pine blister rust, as it is a native disease which does not attack the five-needle pines. All owners of white pines, either in woodlots or in ornamental plantings, should make a special search for the blister rust of white pine on their property. In case it is believed that this disease is found, specimens should be forwarded to the office of investigations in Forest pathology in the bureau of plant industry, where an examination will be made, free of charge, and the best possible advice given regarding the eradication of the disease. General, active co-operation of white pine owners will do much to make effective the efforts of the department to eradicate this serious enemy of the most important coniferous tree of the East.

The white pine blister rust is a serious disease of the five-leaved pines, and especially of the eastern white pine, which was discovered in this country in 1909 for the first time upon pines. The disease is a native of Europe and is widely distributed there. It has caused much damage to the eastern white pine which is planted in Europe and to a less extent has attacked a number of the other five-needle species of pines. In Europe it is known to attack the stone pine of Europe, the Himalayan pine of Asia, and has been found there attacking the Western sugar pine and Western white pine, which are natives of the Rocky Mountains. Although the disease was first discovered present in this country upon white pines in 1909, it had already, as has subsequently been found, been imported into this country a number of years before that time in relatively small quantities. It is estimated that at the present time there are present in this country over two and one-half million young white pine trees which were infected by this disease before they left Europe, and which are now present in this country. This disease has an alternate stage of development upon the leaves of various currants and gooseberries. It has been found a number of times in this country occurring upon currants. These occurrences of the disease upon currants in this country are directly traceable to neighboring diseased white pines, as the disease is quite definitely known now not to be carried upon dormant currant stock.

Since the discovery of this disease in 1909, a special effort has been made by various forestry officials and horticultural inspectors of the eastern states, where the infected imported trees were mostly distributed, to eradicate the disease everywhere that it might be found. It very often occurs in ornamental plantings of private estates, especially upon trees less than 25 years of age. The disease is one from which the tree never recovers, so far as now known; hence

it is of no advantage to the owner of diseased trees to refuse to remove and destroy the diseased trees. The disease has not yet attacked any of our forests, and if everyone who owns white pines which were brought from some other locality and planted would make a thorough search as above requested, a great step would be taken toward the eradication of this dangerous disease.

THE PRUNING OF SHRUBS.

Everyone loves flowering shrubs, but a few people are disappointed when the shrubs do not bloom. There may be many reasons—the soil may not be fertile enough and all the energy of the plant goes to keep itself alive. The soil may be so rich that it develops excessive wood and leaf growth and thus prevents the formation of flower buds. There may be faulty irrigation or injuries during the winter on account of frost or insects may destroy the buds. All these may be considered as special cases. They may apply to one kind of shrub, but not to another growing close by. When several different



READY FOR THE STACK.

kinds of shrubs fail to bloom well under our ordinary Colorado conditions the trouble is almost certainly with the grower, says Field and Farm.

The trouble may arise from the lack of knowledge as to the proper way to prune. In order to prune intelligently it is necessary to know when and how the flower buds are produced. Every species of shrub has its own peculiar way of developing buds but the grower too often does not take this into consideration. He prunes when it is convenient with the result that he cuts off large quantities of bud wood that might produce flowers. It destroys a lot of blossoms, but forces the shrub to produce more wood that does not often bear blossom buds. The three words, prune after flowering, carry the whole subject of shrub trimming in compact form. The rule, however, needs some elaboration. The grower will say that he prunes after flowering, even though he does not apply the knife or the shears until fall or even winter. To be sure this is after flowering but it is so near the new blooming time that the newly formed buds are cut too liberally.

Almost all of the shrubs that blossom before July develop their flower buds during the latter part of the previous summer and autumn. Therefore to cut any of the branches or twigs during the fall, winter or early spring is bad practice. Pruning should be done as soon as possible after the present season's blossoms have faded and the shrubs should not be touched again until the next year at the same season. There are a great number of these early flowering plants. Among them are golden bell, flowering currant, lilac, mock orange, snowball, deutzia, diervilla, barberry and many species of spiraea. These are among our choicest hardy shrubs. If anyone fails with them the pruning is probably at fault.

Another group, conspicuous among which is the favorite hydrangea, produces flowers in late summer. In this group the blossom buds are formed during the present season and so the rule, prune after the flowering, may be stretched until early the following

spring because the buds are not formed in the autumn but upon the new growth made during the spring and early summer. Some of these shrubs are much more tender than the spring blooming group; therefore it is wise not to prune them until time of frost is past in the following spring. The group is a small one and this list should be welcome: Sweet alder, the blue spiraea, witch hazel, Gordonia pubescens, Spiraea bullata and S. conspicua. The Gordonia is not hardy in cold climates and some of the others are subject to winter killing especially if their growth is too luxuriant.

In pruning, best results are always secured with sharp tools and by making all necessary cuts close to the main trunks of tree-like bushes that produce a great number of stems. The only other rule to remember is to cut out all old wood as soon as it is observed so as to permit the free circulation of air and the admission of sunlight. Beyond such pruning as this, the only cutting that need be done is to restrain over-ambitious limbs and to keep the bushes in pleasing forms. Just here a difficulty is likely to arise. Too many

people like to shear their shrubs into formal shapes. They cannot expect abundant flowers if this is done.

ORCHARD AND GARDEN NOTES.

Keep the cultivator going. Keep the hedges clipped this month. Stop cutting asparagus the middle of the month.

The Japanese lilac should be at its best about the middle of June.

If the season is dry, strawberries will be benefitted by a thorough watering.

Look out for currant worms and the leaf miners that work on shrub foliage.

Keep seed pods cut off the rhubarb. It might also be well to add manure to the land.

Another sowing of Golden Bantam sweet corn and late peas may be made now.

Lilium elegans will soon be in bloom. This is one of the prettiest of the hardy lilies.

Mow the lawn frequently. This will thicken the grass making a better lawn.

Keep the dahlias trimmed to one or two main stems. Better flowers result.

Thin all vegetables that are crowding. Beet and Swiss chard thinnings make good "greens."

Aquilegia or columbine, should be in full bloom about the middle of June. Your garden lacks a good flower if

this has been omitted.

Ants may be destroyed by punching holes in the hills with a fork handle and saturating cotton batting with carbon bisulphide. Put this in the hole and cover it with earth.—LeRoy Cady, Associate Horticulturist, University Farm, St. Paul.

The old-time treatment known as the formaldehyde solution is the most satisfactory treatment of seed potatoes to prevent scab. It is as follows: Mix one pint of 40 per cent formaldehyde solution (commonly called formalin) with 35 to 40 gallons of water. Soak the uncut tubers in this solution for two hours. The same solution may be used repeatedly. Treated tubers not required for planting may be used for food or fed to animals with perfect safety.

Every grower of early cabbage and lettuce should know that if the plants are properly hardened in the frames they will stand almost any degree and amount of freezing after resetting in the field. Hundreds of gardeners have not yet learned this lesson. Hardening the plants is accomplished by gradually subjecting them to low temperatures and by watering more sparingly as the time approaches for the plants to be set in the field. At first the frames are opened more during the day and perhaps in two or three days, or on warm days, the sashes are removed entirely from the frames. The plants will soon take on a reddish blue tint and then the sash may be left off at night unless the weather is unusually cold.

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FORMER BRITISH AMBASSADOR DESCRIBES CHILE.

Except Egypt, there is not in the world a country so strangely formed as Chile.

Egypt is 700 miles long and nowhere save in the Delta more than 12 miles wide. Chile is nearly 3000 miles in length, nowhere more than 130 miles wide and for most of her length much narrower. Even Norway, whose shape and sea front best resembles those of Chile, has but 1500 miles of coast and has, in her south part 250 miles of width.

Much of the Chilean territory is a barren desert; much that is not desert is in fact uninhabited. Over large tracts the population is extremely thin. Yet Chile is the most united and the most ardently national in sentiment among all the Spanish-American countries.

Nor is Chile any more singular in the shape of her territory than in her physical conditions also. On the east she is bounded all the way down to Magellan's straits by the Cordillera of the Andes, the height of whose summits averages in the northern regions from 14,000 to 20,000 feet and in the southern from 5,000 to 9,000, some few peaks exceeding these heights.

Parallel to the Cordillera, and geologically much older, there runs along the coast a range averaging from 2,000 to 3,000 feet, between the foot of which and the ocean there is practically no level ground.

The space between this coast range and the Cordillera is a long depression from 20 to 30 miles wide, sometimes hilly, sometimes spreading out into plains, yet everywhere so narrow that both the coast range on the one side and the spurs of the Andes on the other are within sight of the inhabitants who live between them. This long and narrow central depression is Chile, just as the cultivable land on each side the Nile is Egypt; and in it all the people dwell, except those who are to be found in the few maritime towns.

It may seem strange that a country of this shape, 3000 miles long, and with only 3,300,000 people, should be conspicuously homogeneous, united and patriotic. When the difference between territorial Chile, the country of the map, and actual Chile dawns upon the traveler, his surprise disappears.

There are in the republic three distinct regions. The northern is arid desert; some of it profitable nitrate desert, most of it useless desert. The south is an archipelago of wooded isles with a narrow strip of wooded mountain on the mainland behind, both of them drenched by perpetual rains and inhabited only by a few wandering Indians, with here and there a trading post of white men. It is the central part alone that is compactly peopled, a narrow tract about 700 miles long, most of it mountainous, but the valleys generally fertile, and the climate excellent. This central part is the real Chile, the home of the nation.

The northern section, although a desert, has an enormous economic value, and is indeed, one of the chief sources of natural wealth in the two American continents. It is the region which supplies the agriculturists of the whole world with their nitrates, and the nitrates are here because the country is absolutely rainless. Rains would have washed the precious mineral out of the soil long ago and swept it down into the Pacific.

The nitrate fields are unmitigated desert, a region of low stony hills, dry grass. Sources of fertility to other countries, they remain themselves forever sterile. All the water is brought down in pipes from the upper course of the Loa, the stream which rises on the flanks of the volcano of San Pedro.

One can just descry in the far distance its snow-streaked summit.

But the desert is all alive. Everywhere there are narrow-gauge lines of rails running hither and thither, with long rows of trucks passing down them, carrying lumps of rock. Groups of men are at work with pick-axes breaking the ground or loading the trucks. Puffs of smoke and dust are rising from places where the rock is being blasted with dynamite.

Here and there buildings with machinery and tall iron pipes show the oficinas where the rock is ground to powder, then washed and boiled, the liquid mass run off and drained and dried into a whitish powder, which is packed into sacks and sent down to the coast for shipment.

The mineral occurs in a stratum which lies about a foot below the surface, and averages three feet in thickness. It is brownish gray in color and very hard. There is a considerable by-product of iodine which is separated and sent off for sale. The demand for it is said to be less than the supply.

Each oficina—that is the name given to the places for the reduction and preparation of the mineral—is the centre of a larger or smaller nitrate estate, and the larger and more modern ones are equipped with houses for the managers and work-people, each being a sort of village where the company supplies everything to the workpeople, who are mostly Chilean rotos, sturdy peasants of half Indian blood. In South America one sees plenty of isolated mining villages in deserts, but here a whole wide region unable to support human life is alive with an industrious population.

These nitrate fields cover a large area in the northern provinces of Chile, but some districts in which the mineral is believed to exist are still imperfectly explored, and many in which it does exist show a comparatively poor stratum, so that it is not possible to estimate how much remains to be developed and the length of time it will take at the present rate of production to exhaust that amount. We were told, however, that so far as can be conjectured, the fields might (at the present rate) last nearly two centuries, before the end of which period much may happen in the field of scientific agriculture.

Between the nitrate fields and the sea there lies a strip of wholly unprofitable desert, traversed by that range of hills which rises from the coast all the way along the west side of Chile and Peru. Here the railway line forks, sending one branch to the port of Antofagasta, crushed in between the dreary, dusty hills and the rocky shore. Landing in the surf is often difficult and sometimes dangerous, but as the chief port of the southern nitrate country it receives a good deal of shipping.

Nearly 500 miles further south are the towns of La Serena and Coquimbo, the former a quiet old Spanish city, placed back from the coast to be out of the way of the English and Dutch marauders, who were frequent and formidable visitors in these seas, after Sir Francis Drake had led the way in his famous voyage in 1578, when he sailed up and down the coast plundering towns and capturing ships.

Coquimbo is a newer place, with a fairly good harbor, and thrives on the trade which the mines in its neighborhood assure to it. It is an arid land, yet here there begins to be some rain, and here, therefore, we felt that we were bidding farewell to the desert, which we had first struck at Payta (in Peru), 1,500 miles further north. Nevertheless there was little green upon the hills until we reached, next day, a far more important port, the commercial capital not only of Chile, but of all western South America, and now the terminus of the transcontinental railway to Buenos Aires.—Extract from Article VI., by James Bryce.

Weekly Market Report

Cattle and Hogs Higher—Moderate Offerings Readily Taken at Slight Upturns—Lambs Lower.

CATTLE—There was only a moderate supply in the native division, the combined estimate calling for 3500 head, of which about 1700 were natives. The small supply came as a relief to the selling side and the trade showed more firmness than it did at any time last week. In the face of the good competition sellers held out for an advance and generally se-

cured it. Practically all grades of steers were wanted and prices were scarce, three loads of 1500 to 1600 pound choice steers making \$8.60@8.75, latter being top. There was an early clearance.

Butcher supply was also moderate and ran largely to cows and a few loads of medium to good grade heifers. No strictly prime or fancy heifers were offered. Outside buying demand was the most noticeable factor of the day's trade and considerable strength was felt from this quarter. Packers showed no inclination early in the day toward bettering last week's bids, but because of the good inquiry from outsiders were forced to go better to get what they needed. Bulk of the heifers were 10@15c higher.

The same conditions held true of cows. Supply was seasonable and of a volume more suitable to the demand than was the case at any time last week. Local butchers were active and wanted cows; bulk, 10@15c higher. Bulls reflected but little change.

With just a moderate supply of stockers and feeders the market was conducted along much better lines than was the case last week. With rains relieving the drought, local traders are expecting a better inquiry from the country and showed more of an inclination to buy. Sellers registered but little complaint about the way they were selling their holdings and the general market was active as long as the showing held out. Prices looked in most cases about a dime higher.

Quarantine receipts, 70 car loads. There was a good demand for all kinds of Texas steers and the market started out on an active basis. While order buyers did not purchase heavily, yet the support from this quarter was felt and helped to give the market a strong tone. Packers, too, wanted the steers and prices were on a steady to strong basis. Eight loads of grass steers finished on cake sold for \$8.15@8.30, latter price being top in the quarantine division. Top for straight grass steers was \$7.00, with bulk clearing at \$6.90@7.50.

HOGS—Supply small. A strong demand existed and the market was active, with prices on a 10c higher basis most of the day, but still towards the close of the day at least half of the advance was lost, and the close was a little quiet. Several loads went at \$8.35, which was the top of all western markets, as no hogs in Chicago went for more than \$8.30. The local bulk sold at \$8.20@8.30, which is also better than the bulk brought in Chicago.

Shippers and city butchers were the best buyers, and they secured most all of the strictly good hogs 180 pounds and over, for which they paid \$8.25 and better, while the mixed and plain grades went at \$8@8.25, and the throwout packers went at \$7.65@7.85, and there was quite a lot of rough throwouts on sale.

Strictly good pigs and lights were easy enough to sell satisfactorily, but the fair and poor kinds were hard to place. Best lights under 165 pounds sold at \$8@8.20, fair grades \$7.75@8.00, best grade of pigs under 125 pounds sold at \$7.75@8.10, fair \$7@7.50 and poor grades \$6.25@7.00. Some of the poorer grades of pigs and lights were unsold when the market closed.

SHEEP—With a moderate supply the market was a little irregular, especially on lambs. Sheep sold without any material change and the best lambs from Tennessee brought the same as they were selling at the close of last week, while other Tennessee lambs and all natives showed a loss of 10@15c, and they were also a little slow sale.

Several loads of the best lambs from Tennessee sold at \$9.55, which was the top of the market, while other Tennessee lambs went at \$9.40. Best natives sold at \$9@9.15, with a few as high as \$9.25 from Southern Illinois. Kentucky lambs also sold up to \$9.25. A right good grade of native lambs sold at \$8.50@9.00, fair kinds at \$8@8.50 and the culls and thin ones in general at \$6.50@7.50.

Most of the good sheep that were not too heavy went at \$5, the same as all of last week, while the heavier grades went at \$4@4.50, and like last week they were a little slow sale. Best stockers went at \$3.25@4.00, fair at \$2.50@3.00, and bucks at \$3.50. It seems that bucks have now settled down to one price, as they are all going at \$3.50.

HORSES—A light Monday run brought competition on all classes of animals, with the exception of the small kinds, and these did not meet with many calls. Southern states were not represented as strong as they might have been and the trade in general from this section did not show its usual life, but this is one of the features of this season of the year.

MULES—Miners and big class mules sold, but these sold at values about steady, with the usual midsummer price range and no high prices were being paid. Pitters on the quality order found sale in a satisfactory range also, but outside of these few kinds there was not a great deal of animation being displayed.

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The Pig Pen

It is not advisable to mix salt with the feed for the pigs, unless it is done with great care so too much will not be given. The most practical way to feed salt is to mix it with charcoal and ashes, providing a box for this material so that the sows can have it before them at all times.

CARE OF SOW AT FARROWING TIME.

Brood sows should be allowed plenty of room to exercise in, up to about two days of farrowing time. They should be kept in yards and pens where they will not be obliged to pass through narrow gates, over boards, doorways, or through low doorways where they are obliged to bend their backs to get through. Any one of these is likely to result in dead pigs at birth.

It is a good idea to feed whole oats scattered on the feeding floor or ground for a week or two prior to farrowing, so that the sow will be forced to exercise in getting her feed. When about due to farrow, the sow should be put into a pen which has been fitted with wallguards, where the pigs may find safety after birth. The ordinary pig guard is useless because it is neither high enough from the floor nor far enough from the wall, and the space underneath fills up with straw so that the pig is crushed almost as easily as if the guard were not there.

For thin, active sows a large pen may be used. For extremely heavy, fat sows, it is best to have a pen space comparatively small, so that the sow cannot turn around quickly and thus step on her pigs. The sow should not be fed heavily just prior to farrowing, nor just after farrowing, but should have a thin slop for a few days so that there may be no tendency to constipation. If there is any such tendency, a dose of epsom salts should be given in the swill.

The bedding in the pen should be kept absolutely dry as dampness, particularly in cold weather, will very quickly cause death loss among young pigs. Within a week or two the sow and her litter should be moved out to a colony hog house where they will get more exercise. When the pigs are two or three weeks old two or three sows may be turned together.

ADVISE USE OF RAPE FOR SUMMER PIG FEED.

Sow a patch of rape. It will furnish the growing pigs with a wealth of palatable green feed, and if given a chance to "come back," will produce crop after crop of excellent succulence.

The most satisfactory method of growing this crop for swine, according to James G. Fuller of the Agricultural Experiment Station, University of Wisconsin, is to provide three yards of about equal size and seed them three weeks apart with

one and one-fourth bushels of oats and five pounds of rape to the acre. The first lot, of course, is generally sown as soon in the spring as the ground is dry enough to work.

The Dwarf Essex variety is best and is usually sown broadcast or in drills 28 inches apart. If in drills, it is best to sow lengthwise of the field as the animals will not trample down the crop in going from or coming to the feeding yard.

The pigs can be turned on to the first lot as soon as the rape is from 14 to 18 inches in height, and as soon as they have eaten it down to four or five leaves to the stock, the pigs are transferred to the next patch and so rotated from one lot to the other throughout the summer.

If well supplied with satisfactory forage during the summer months, pigs can be finished for market and fattened off quickly as soon as the crop matures.

The Shepherd

ANGORA GOAT RAISING PROFITABLE IN AMERICA.

Refusal to Permit Exports of Breeding Stock No Longer a Menace.

The raising of Angora goats in the United States is now a demonstrated success, according to a report just published by the United States Department of Agriculture under the title, "The Angora Goat," Farmers' Bulletin 573. The industry, says the bulletin, is indeed so well established here that growers need not be inconvenienced by the action of South Africa in prohibiting the exportation of Angoras, for the quantity of good blood in this country is already sufficient to meet all requirements. In the opinion of experts the best American fleeces now equal any grown in South Africa or Asia Minor, the original home of the Angora.

Although nearly every state in the Union now possesses its flock, the Southwest and the Northwest are especially well adapted to the industry, in particular the large areas recently logged off in the Northwest. There the Angora not only thrives himself but helps to clear away the brush which if allowed to grow unchecked might easily become a dangerous fire trap. Thus it is often said that the Angora works and pays for its board at the same time.

It is paying more and more, for the value of the fleece or mohair is increasing steadily. Formerly the use of mohair depended so largely upon the prevailing fashion that its price varied widely from year to year. This condition, however, is rapidly changing as new uses for mohair are continually found, from automobile tops and table covers to dress goods and curled false hair, and today the grower is assured of a reasonably steady market. The price of course varies with the quality, the very best fleeces bringing on an average from 42 to 55 cents a pound. The weight of a fleece has a very wide range but in 1909 the average for Oregon was

found to be 3.7 pounds and for Texas 1.85. On account of the greater heat, however, and the damage of shedding, Angoras in the Southwest are frequently shorn twice a year—a fact which must be taken into consideration in all calculations.

This practice of clipping twice a year is in many ways a drawback to the industry since it tends to lower the average grade of American mohair. Mohair as good as any, can be and is grown in this country, but the average quality is not today considered to be as good as the foreign. About 2,000,000 pounds are annually imported. Ordinarily this is blended and spun with the domestic product. Six inches is the shortest length of fleece usually desired and, because of shearing twice a year, much Texas and New Mexico mohair falls below this standard. Where the fleece is allowed to grow for 12 months, the average length is 10 inches and in the best flocks it is not unusual to get 15 to 20 inches. Romeo, the sweepstakes buck at the El Paso show in 1910, is an example of what is possible. His fleece weighed 18 pounds, measured 20½ inches in length and sold for \$115. Such fleece is not of course the product of ordinary commercial conditions. It implies a considerable amount of care and personal attention.

The birth rate is approximately 65 per cent, but in well managed flocks this has risen on occasions as high as 120 per cent. Since the kids are not hardy, it is obvious that this means skill and industry during the breeding season. The best methods of caring for the flock at this time are discussed in some detail in the new bulletin. Otherwise the management of Angoras does not differ greatly from that of sheep.

While the Angora goat needs attention it is adaptable and as far as temperament is concerned should flourish in any part of the United States. In Montana the flocks face the heavy snowfalls with equanimity as long as a dry place is provided for them at night and though the heat in the Southwest frequently makes it necessary to shear twice a year in order to prevent shedding it does not otherwise affect the health of the flock. Dampness, however, is more injurious than either cold or heat. High land is the native home of all goats and they invariably seek it when left to themselves. Pure water is also an essential.

Otherwise the Angora is not particular. It will feed with cattle and sheep, and, though in some danger of being kicked, with horses also. As a matter of fact, however, the goat prefers a certain amount of rough pasture and is particularly happy when clearing up brush land. There is one instance of a flock of 600 being allowed free grazing in a California forest reserve in order to keep the strips of cleared land, known as fire breaks, free from weeds and vegetation. Settlers in the Northwest find the Angora most serviceable in browsing off the brush on their new lands, and one railway company purchased a flock to keep its right of way clear and attractive. On very rough land the danger of injury to the fleece

Out of stretchy Sows and 1000 lb. Boars. It is your move. Buy them and win. J. P. Vissinger, Box 8, Alton, Ill.

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must, however, be kept in mind.

As has already been said, the Angora can be bred sufficiently pure for practical purposes from the stock already in this country and there is no need of further importations for breeding purposes. Some years ago, however, this was not believed to be the case and in 1881 the Sultan of Turkey endeavored to preserve for his dominions the monopoly of the mohair trade by prohibiting the exportation of the live animal. His example was followed by South Africa, but it was too late. Some of the best blood was already in America and today other countries are buying of us, flocks having been shipped recently to Brazil and the Argentine.

Various associations have already been formed for the development of the industry in this country and the quantity of the annual product is increasing rapidly. In 1913 it is estimated that 5,000,000 pounds of mohair were grown in the United States. Fuller details of the management and care of flocks are to be found in Farmers' Bulletin 573, "The Angora Goat," which will be sent free on application to the Department of Agriculture.



SHEEP-RAISING SHOULD BE ENCOURAGED.

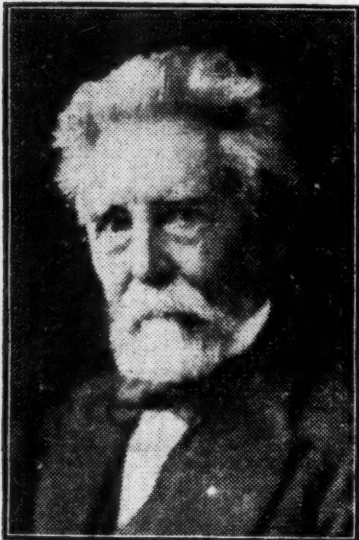
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With soaking rains just in time to prevent the sacrifice of live stock and stimulate all growing crops, and with a record-breaking wheat crop ready to be gathered, let us give thanks to the Giver of All Good.

The government plan of encouraging trade between the producer and consumer by means of parcel post is being tried out by 20 cities, with fairly encouraging results, but it seems that the average farmer in the regions concerned is hardly yet aware that the plan is in force increasing the weight limit on packages from 20 to 50 pounds and offers to put producer and consumer in communication with one another through the post office.

An international congress of authors and journalists which some of the most famous thinkers of the age will attend, will convene upon the grounds of the Panama-Pacific International Exposition in 1915. Among the questions considered by the congress will be the adopting of uniform international copyright laws, and the arbitration among authors of playground disputes.

For the first time at any great exposition, all monumental sculpture at the Panama-Pacific International Exposition at San Francisco in 1915, goes out of doors. This has been impossible at all previous exhibitions because of the disintegration by the

elements of the plaster in which the sculpture is presented. The international exhibit of sculpture will be placed in the plaza in front of the crescent shaped Palace of Fine Arts.

"Fire blight" is doing much damage to orchards in Kentucky, and the horticultural authorities are working hard to prevent its spread. It attacks apple, pear and quince trees, and when established is difficult to deal with. Spraying is useless because the pest grows under the bark, and the experiment station recommends a surgical operation on the infected area as the only cure. The disease has been reported in nearly all parts of the state and is giving fruit growers a good deal of worry.

The illumination of the Panama-Pacific International Exposition at San Francisco in 1915 will be a triumph of American engineering. For the first time in the history of Exposition building, the "flood lighting system" will be used for outdoor illumination. By the use of thousands of nitrogenous arcs, of a type never before perfected, and not to be used elsewhere until the close of the exposition, the chief zone of illumination throughout the 635 acres of exposition grounds will be maintained at night to a height of 125 feet, with a variation of but 5 per cent throughout this height.

A new kind of map making has been made necessary by aviation, and the Aero Club of America is to do for this country in some degree what has been done already for France and some other European countries. The face of the world looks very different as seen from a height of 1000 feet or so, and for flying across country by compass landmarks are essential, and a map for aviators must also indicate landing places in convenient locations. A committee of 65 headed by Rear-Admiral Peary has been appointed by the club to take up the matter, which has for some four years been under consideration but has been put off pending international agreement upon the scale of the maps and the code of signs to be employed.

PROPERTY IN ANIMALS.

Property exists, writes John H. Ingham in the April Case and Comment, the Lawyer's Magazine, in all domestic animals of intrinsic value, like horses and other beasts of draught and animals used for food. They are taxable like other personal property and are the subjects of larceny. Otherwise of the dog, at common law, but this has been generally altered by statute and, even where not specially named, dogs are, in the modern evolution of ideas, regarded as "property" in the legal sense. The increase of an animal belongs to the owner. This is likewise the case where it is loaned, but, where it is hired, the increase belongs to the hirer.

FLAG DAY.

The 14th of June is almost universally observed as Flag Day, the custom of raising the Stars and Stripes over the schoolhouses of the country dating back more than a century, the first record of such a ceremony being that of Catamount Hill, Colrain, Mass., in May, 1812. The custom has grown with the passing of years until now nearly all of the states of the Union have enacted laws requiring the schools to exhibit the national flag on the school grounds.

The first flag unfurled in America was the Spanish flag, by Christopher Columbus, Oct. 12, 1492, on the island of San Salvador. The colonies used the British flag, and although loyal to the king, some of them adopted a flag in 1775 which was called the Rattlesnake. The first United States flag (adopted by congress, June 14, 1777) having the stars and stripes, was made, it is said, out of a soldier's white shirt, an old blue army overcoat and a red flannel pithcoat. Paul Jones is said to have first raised this flag at sea. The flag raised by Washington at Cambridge when he took command of the army was the

English flag, with thirteen red and white stripes added. The flag is now composed of 47 stars, and a new pattern is now under consideration, the design for the star field being a five pointed star, with an outer circle of stars, to which any number may be added.

Washington bared his head before the flag at Yorktown. This glorious flag gave inspiration to Jackson's intrepid backwoodsmen when they annihilated the invaders at New Orleans. Dewey saluted this flag after the battle of Manila. At Vera Cruz this glorious Old Glory meant an end to anarchy and oppression in Mexico and a pledge that the people of that unhappy country should rise to happiness and prosperity.

And when this glorious emblem of liberty is flung to the breeze on the public schoolhouses may it inspire our youth in the pursuit of life, liberty and happiness, and let all rise to their feet and remain silent.

DEFINITION OF A GOOD FARMER.

Contrary as it may seem, Prof. Alfred Vivian of the College of Agriculture, Ohio State University, has recently defined a good farmer as "one who does everything he can to produce acids in his soil." but, he hastens to add that, "he is also one who learns how to detect acidity and then uses lime to correct it." This is simply a means of emphasizing the importance of adopting the best all around farm practices. Proper drainage, careful plowing and harrowing, thorough cultivating, the use of green manure crops and the application of manure and fertilizers will tend to slightly hasten the formation of acid. However, this gives no reason why the application of acid phosphate, for instance, should be discontinued. All Ohio soils need phosphorous and the way they can get it in sufficient quantities is through the use of some phosphatic fertilizer. The farmer should not hesitate to use acid phosphate because the effect of the heaviest applications of this fertilizer would be neutralized by 20 pounds of lime to the acre. The more important thing for the farmer is to know when the soil becomes sour and then apply lime. It is significant in this connection to note that it is characteristic of acid soils to be low in the element phosphorous. Prof. Vivian advocates the application of lime in small quantities often, rather than a heavy application made to last for a number of years.

TRANSPLANTING GARDEN PLANTS.

Strong, stocky plants with compact and much branched root systems result from proper transplanting of garden plants. When possible, suggests Prof. V. H. Davis of the College of Agriculture, Ohio State University, transplant in a freshly turned soil that has been put in prime condition, thoroughly and deeply firmed and compacted. The ideal time to transplant is just before or just after a rain, particularly if the weather continues cloudy. In any case, cool and cloudy days should be chosen if possible. In hot and dry days late afternoon or evening should be selected for this work. It is advisable to water plants as they are transplanted. After the water soaks away, loose, dry earth should be drawn about the plant to prevent the soil from baking and the water from evaporating. While being transplanted the plants should be kept out of the sun as much as possible and both roots and tops kept wet. In lifting plants, the soil should be thoroughly wet and the plants removed by using the trowel or fingers under them as much as possible, thus breaking the tips of only the smallest roots. Plants should be set deeper than they stood in the original bed. They hold their position better and the roots will be in cool, moist earth.

THE COST OF CLEARING LAND.

Within the next 25 years it is estimated that most of the remaining merchantable timber in Minnesota, Michigan and Wisconsin will be logged off. This means that in many counties there will be a change from

logging to farming and that the problem of clearing economically the logged-off land will assume even greater importance. At the present time there are nearly 12,000,000 acres of such land in Michigan, approximately as much in Minnesota, and something less than 11,000,000 in Wisconsin. The greater part of these millions of acres is not only utterly useless now, but, on account of the danger of fire, an actual menace.

Hitherto the development of these lands for agricultural purposes has been seriously retarded by the high cost of clearing. A recent investigation conducted by the United States Department of Agriculture, the results of which have just been published in Bulletin 91, "Cost and Methods of Clearing Land in the Lake States," reveals the fact that this cost runs from \$20 to \$90 an acre. Little logged-off land desirable for farming purposes can be had for less than \$15 or \$25 an acre, and the total cost of cleared land varies, therefore, from \$35 to \$115. The average, the investigators found, was \$65 an acre. This, when the expense of other necessary improvements is taken into consideration, is more than equally good farm land in other sections can be bought for. In view of these facts the proper disposition of other logged-off areas becomes an important problem.

In the first place, as a protection to the settler, the investigators recommend that in every tract sold by land companies, there should be at least 10 acres cleared and ready for the plough. This will enable the farmer to raise hay and other crops while putting the logged-off land into condition for the most economical removal of the stumps, for clearing can be done much more cheaply after the ground has been in pasture for several years.

Second growth, the investigators assert, must be regarded as a source of expense rather than income. In a few places it may be possible to dispose of it to charcoal and wood-extract companies, pulp mills or mining companies, but in general it does not pay to haul the wood more than four or five miles and in practice it is usually the fact that the second growth has no value except as firewood for the settler's personal use.

The brush should be cut close to the ground when in full leaf, heaped into compact piles, and burned as soon after logging as possible. On account of the danger of the fire spreading, however, the local or state fire warden should be consulted before the actual burning is attempted.

After the brush and second growth have been removed, it is considered best to put the land into pasture for several years. On hardwood land, green stumps are much more difficult to remove than those which have been allowed to rot for six or seven years, and pine stumps are gradually worked out of the ground by the settling of the land and the heaving action of the frost. The practice of harrowing and sowing the land, either immediately after burning or in the spring, is therefore very general. Sprout growth, the great drawback to this system, must, however, be kept down rigorously and this requires hard work. Dairy herds are now found useful in this respect.

When the time comes to turn the pasture into crop-bearing land, the farmer has the choice of four methods: (1) explosives, (2) explosives used in connection with stump-pullers, (3) stump-pullers alone, and (4) power machines. His choice will depend on the nature of soil and stumps but it will not often be possible for him to ignore the use of explosives. On heavier soils they are particularly effective. They do their work thoroughly and quickly, but they do not require a large force of men and the expenditure involved can be spread over as long a time as suits the farmer's convenience. The expense can also be materially lessened by co-operative purchases of wholesale lots. Moreover dynamite containing only 20 or 30 per cent nitroglycerine is often fully as effective as the more expensive kinds with higher percentages of nitroglycerine, frequently considered necessary.

On lighter soils and with well-decayed stumps, pulling machines are

sometimes substituted satisfactorily for explosives. The tripod type, which lifts the stump vertically, is more powerful, but also more troublesome than the capstan, which pulls from the side. The capstan can pull an acre or more of stumps without being reset, but at the same time it may be successfully resisted by a stump that would not offer the least trouble to a tripod, which, however, must be reset for every stump it pulls. On large tracts of land a power machine with an efficient crew may do the best work of all, but such an outfit can only be employed economically on large operations.

Naturally the cost of this work varies greatly. The department investigators found indeed that it could be as low as \$5 and as high as \$100 an acre. The quantity of second growth and logs, the kind of stumps and the time that has lapsed since logging, the size and number of stumps per acre, and the character of the soil are all determining factors. Hardwood which when green is very expensive to remove, decays in time so that it offers little difficulty; on the other hand white pine and Norway pine will not decay in 50 years. Again hardwood land is likely to contain many more stumps to the acre than white pine areas. On an average an acre may be expected to have about 45 white pine stumps, whereas 400 is not an unusual number for hardwood. Incidentally it is worth remembering that a circle with a radius of 117.8 feet contains an area of one acre. If the stumps in several such areas be counted, the total number in any given tract may be estimated with reasonable accuracy.

ACCURACY OF ESTIMATES OF FARM SUPPLIES OF WHEAT.

In years past there has been some disposition to question the estimates made on March 1 each year by the Department of Agriculture of the stocks of wheat held on farms as being too low, giving as a reason that the apparent supplies on July 1 plus the apparent consumption for one-third of a year (March 1 to July 1) and exports from March 1 to July 1 gave a figure larger than the estimate of the Department of Agriculture as to the stocks on farms. During the past four years these estimates have been checked against data, collected after the close of the season, of the marketings of wheat by farmers, supplies on July 1, and the amount used for seed.

Considering the difficulty involved in securing accurate data of supplies, there is reasonable consistency in the figures above.

The total supplies of wheat in the country at any one time are made up of that held on farms, that held in interior mills and elevators, and that held in primary markets. Stocks held at primary markets and a comparatively few interior points of large accumulation can be counted and are called "visible" stocks, and the amount so held is reported each week in trade journals as visible stocks of wheat. But no such data are collected concerning stocks held in the vast number of small mills and elevators scattered throughout the country.

Soon after harvest farmers market their grain much faster than the receipts of grain at "primary" or "visible" supply points indicate, supplies then being accumulated in the uncounted interior mills and elevators; as the season advances, the movement from farms slackens, but the supplies at primary or "visible" points continue to be supplied largely by the interior "invisible" points. In other words, in the first part of the crop season the marketings of farmers are relatively greater than the receipts at primary or "visible" points, but in the latter part of the crop season, from March 1 to July 1, the marketings by farmers are relatively less than the receipts at primary or "visible" points, the interior "invisible" points being the intermediate reservoir.

Those who have criticized the estimates of the Department of Agriculture have evidently overlooked this difference in the relative marketings by farmers and the movement to primary points. The unaccounted stocks on March 1 are held not so much on farms as in the interior mills and elevators.



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Every piece in this large 33-piece dinner set is of high grade material, perfectly white, and large enough to please the most particular housekeeper.

The design on each piece is made to our special order and the red roses with the green foliage is so real that they seem to only lack their natural fragrance. The edge of each piece is finished with solid gold trimmings—the kind that positively won't wear off. Our dishes are prepared by a secret process; the delicate enamel finish on each dish will not graze or get streaky when washed. Indeed, your dishes will be just as white and clear in a year from now as they are the day you receive them, provided you take ordinary care of them.

If you could buy these dishes from your local dealer they would cost you so much money you probably would feel you could not afford them. But they are not for sale—they are made to our exclusive order by the best known pottery in America, the Owen China Company of Minerva, Ohio, and each dish bears the trade-mark of the Owen China Company, thus guaranteeing them to be genuine Owen Chinaware. You will find Owen Chinaware for sale in only the best stores—but our special rose design is made only for our big family of friends and subscribers.

Be the first person in your neighborhood to get a set of these magnificent dishes. Sign the coupon below, right now, and mail it to me today, and I will send you one of our large sample needle cases, containing 115 of the very best needles in all useful sizes. We will also send you a picture of the dinner set showing the dishes in all their brilliancy and handsome coloring.

Every woman needs needles, and when your neighbors see this splendid great big needle case, they will want one just like yours. If they like it, tell them that they can have one of these large needle cases if they will hand you 25 cents in connection with a SPECIAL OFFER which I will write you about when you sign the coupon.

You won't have a bit of trouble in getting 16 of your neighbors and friends to accept this special offer, and after you have collected 25 cents from each of them the set of dishes is yours forever. You can do this favor for us during your spare time. The children can help you and they will be glad to do so. Hundreds of successful dish earners have earned their dishes the same day they received their needle cases.

Write your name on the coupon below, right now—and mail it to us tonight, quick—and you will receive our easy plan by return mail which will tell you all about our wonderful dinner set and 41 extra gifts, which we give for promptness.

You have nothing to lose—but everything to gain. I take all the risks and trust you with the needle cases, because I know after you get my complete outfit and see the beautiful colored picture of the dishes, just as they will look when you take them out of the box as the lady is doing above, you will be as anxious to get a set as she was and equally as pleased. You will be surprised, astonished, at the ease with which you can earn this dinner set.

The first thing to do is to send me your name on the coupon and the whole outfit, including needles, colored picture of dishes, full instructions for getting the dishes and 41 beautiful extra gifts, will be sent you by return mail, so you won't have to lose any time in getting started.

The 33-piece dinner set alone will more than repay you for the little favor I ask of you, but we are going to give you a splendid set of 40 beautiful high-class souvenir post cards printed in many colors (no trash) as an extra inducement for you to be prompt. Even though you don't complete your dinner set order the 41 post cards are yours.

But that's not all by any means—we have an extra surprise gift that we will pack with your dishes, and which you will know nothing about until you receive them and open your crate—just like the woman above is doing. This surprise gift is a beauty—something every woman will go into raptures over. I'll tell you more about it when you send me your name.

You take no chances in signing the coupon, because, if you get sick or for any other reason fail to earn the dishes, we will pay you well for what needles you dispose of.

I also include with each set of dishes my plan for paying the freight charges on the dishes. My whole plan is so simple and will take up so little of your time that you can't fail to earn a set of these dishes if you only make up your mind to do so, and sign the coupon below.

Remember, the coupon starts every thing—sign it right now—quick.

MAIL THIS COUPON TODAY

Colman's Rural World,
St. Louis, Mo.

I want to get a 33-piece dinner set and the 41 extra gifts. Send me the sample needle case, picture of the dishes in color, and tell me all about your big offer. It is understood I am placed under no obligation in signing this coupon.

Name

P. O.

R. F. D. State

COLMAN'S RURAL WORLD,
Saint Louis, Missouri.

Home Circle

A LOVE LETTER.

Dear May, your little note has come,
And life seems specially sweet to-day;
My spirits rise, seems like there's
sun,
Yet only clouds hang o'er the way.

The weather always seemeth fair
When love within the hearts abide;
I could be happy anywhere
If you were always at my side.

I really think you're made for me,
For in your ways no fault I find;
But rather so much good I see
In you, it always cheers my mind.

My last thought, ere I fall asleep,
Is you, and when I ope my eyes
I think I see you, and so sweet
You seem, and, too, so very wise.

There's something 'bout your style,
dear May,
That captivates and charms me so;
My mind's so full of you each day,
Seems you're nearby where ere I go.

Regards to mother; it doth seem
That the mother of so sweet a lass
As you, is worthy of esteem;
I've more to say, but let it pass.

Now may God's blessing rest on you,
And naught but joy come o'er your
way;
And now I'll close and bid adieu,
But look for me next Saturday.
P. S.—Hope your father'll be
home.

A. E. V.

JUST A CHAT.

By Janetta Knight.

Two month have passed since writing
for the Home page.
Other silent ones have been busy
like myself.

We are having very warm weather,
with frequent rains. Crops are doing
fine; better than the two other
years we have been here.

Strawberries are gone; were a good
crop, also better shippers this year.

We are moving again in September,
having traded our Oklahoma farm for
one in the mountains, three miles
from Brentwood, Ark. I can not tell
you much about it yet as I have not
been to it. We will be 2,000 feet
higher and are sometimes above the
clouds. That will be a new experience.
Those that have been there
say it rains at Brentwood when the
sun is shining at the farm. They
raise larger corn there than here at
Gentry, fruit is also plentiful.

It will be sorrowful to part from
the friends here. Also hard to go
among strangers, where there will be
no face one has ever seen before. I
should not dread it, I suppose, as
this is the fourth time this has been
my lot.

THE HEAVENS DECLARE THE GLORY OF GOD.

Editor Rural World: In contemplating the visible firmament with the unassisted eye, we behold only a mere fragment of the great Temple of Creation, and even with our most powerful telescope we get but a faint glimpse of the interior recesses of this mighty fabric. Since the days when the elder Herschel commenced to explore the profundities of the Milky Way with his great telescope, the sphere of our conceptions of universal nature has been wonderfully enlarged, and billions of stars and starry groups have been brought into view that were formerly unknown to observers. Man appears only as a microscopic animalcule amid such scenes, and his terrestrial habitation as a particle of vapor when compared to the ocean. We will never

be able here, nor in the future world to explore all of the beautifully decorated and splendid apartments in this temple, "not made with hands." The sun and planets are located in the interior of the great nebula known as the Milky Way, which comprises within its limits, according to the most reliable estimates, some 20,000,000,000 of suns or luminaries, and in all probability a hundred times that many opaque bodies are in swift revolution around their respective central luminaries in this great star cluster.

What must be the dimensions of this vast compound congeries of luminous orbs that encompass the earth? What is the distance across this enormous star cluster? What is its length and breadth? I have before me the computations of a renowned mathematician who figured out this distance nearly a century ago, but of course his work must be considered only as a very rough approximation to the true distance, as finite beings here have only been endowed with mental power sufficient to measure the distance to a very few of the nearest luminous orbs.

According to the calculations of the above mentioned computer, the distance would be 9,940,000,000,000,000 miles. Light is endowed with a swift degree of motion, and moves at the rate of 12,000,000,000 miles every minute, yet it would require 1,640 years for it to pass across this mighty interval. The swiftest velocity of a cannon ball is 500 miles an hour, yet it would require about 2,268,000,000 years in passing over the same space. What a vast number of plants both primary and secondary would be contained in such unfathomable regions, and if intellectual natures people those worlds what must the number of those hosts be? Can it be possible that any human being would consider our world as the only one inhabited in this vast assemblage of celestial bodies? Vast and incomprehensible as the dimensions of this great star cluster appears to be, yet it is not the universe, indeed, it is only a very small part of the visible universe revealed by the telescope, as several thousand of such nebulae have been discovered in recent times, and many of them are supposed to be much larger than the Milky Way. We will get an idea of the vast extent of the visible universe if we take in consideration the fact that between each of these great star clusters there intervenes an awful gulf, supposed to be many times greater than the diameter of a nebulae. What then must be the distance reached by our best optical instruments, and what must be the distance across the known universe? Beyond the known universe, in the vast unexplored regions of immensity the works of the creation may be indefinitely extended, and material existence may cover the infinity of space. It has been surmised by some philosophers that should the known universe be blotted out of existence, the space it occupied would be so small in comparison with the unknown regions, that the all-seeing eye would hardly notice that stars were missing. In the sacred writings we are told that the Divine perfections are displayed "above," or beyond the utmost range of "the visible heavens."

We are informed in the Psalms that "The heavens declare the glory of God," and also that "He humbleth himself to behold the things that are in heaven and in the earth." In this latter quotation God is represented as humbling Himself when He looks down from the remoter glories of His empire on all that is visible to the view of mortals. That means that the glory of the Divinity is manifested in regions far beyond the visible firmament that man is acquainted with, and which has been revealed by the telescope. The visible universe then, vast and magnificent as it is, is only a small portion of the empire of the eternal. If those innumerable worlds mentioned above are only so many expansive deserts, without any relation to intellectual existence, they could afford no evidences of wisdom and beneficence, and consequently could not be said, with any show of reason, to "declare the glory of God." The inspired writers have described in glowing terms the glories of the everlasting kingdom of Jehovah, but if there are no subjects in that kingdom who are capable of appreciating the wisdom, power, beneficence and goodness

of their Supreme Ruler, such descriptions would be bombastic. If this kingdom were chiefly confined to the evanescent speck of earth on which we dwell, it would scarcely be worthy of the epithet which are here bestowed upon it.

Such a limited kingdom as our earth and its inhabitants, would not correspond to the majesty of an infinite, omnipotent and eternal being, who has the range of immensity as the theater of His operations. A kingdom to be worthy of everlasting duration should extend and include within its limits not only the visible, but also the invisible universe. Should the innumerable worlds I have mentioned above be only huge masses of chaotic matter devoid of inhabitants, and if wisdom, design and goodness were not displayed among those orbs in that far off region there would be little to excite the admiration and devotional rapture of superior intelligence. Such worlds would have been created in vain, and for no useful purpose. The theory that so many entertain, that our little obscure planet is the only one that is inhabited, is certainly untenable and preposterous. We learn from the Scriptures that the nations of the earth are counted in the sight of God as "nothing and less than nothing and vanity," and that they are "as the small dust of the balance." How could this be the case if man is the principal being in the universe, as many suppose? There is an implication in these words, and also in others of the inspired penmen, that might be brought forth, that all people now on earth or who have lived on it since time began, are only as a drop to the ocean, in comparison with the unnumbered myriads of intelligences who dwell on the celestial world.

J. M. MILLER.

GOOD RECIPES.

Chocolate Pudding—One quarter pound bread crumbs, one ounce fine sugar, two eggs, one ounce cocoa, one pint of milk, few drops of vanilla essence. Boil the milk, add the cocoa, stir in the bread crumbs, sugar and yolks of eggs, and essence. Put the mixture in a buttered pie dish; bake in a slow oven till set; whip the whites to a stiff froth, and cover the pudding, put in the oven to brown slightly. Sufficient for six or seven persons.

Cream Scones—One pound of flour, large teaspoonful of baking powder, one teaspoonful of castor sugar, two ounces butter, one teacupful of sweet milk or cream. Mix the dry ingredients all together, and with the milk make into a nice dough. Divide the dough into pieces, roll each piece out very thin, and cut into four when on the griddle or in oven.

DE VINE.

De little vine dat klimbs yo' house
Seems bold, yet friendly, tu.
It kums rite tru yo' window,
An' soon am peakin' fro.
And in de vine's a lesson such,
Foh it do hold so fast
Dat nebber did a vine let go,
Ev'n in de winter's blast.

ALBERT E. VASSAR.

St. Louis.

YOU NEED MEDICINE AT THIS TIME.

When nature falters and from overwork a tired, wornout body is unable to perform its natural functions, ELLA R. BERRY'S CREOLE TEA is indicated and may be confidently relied upon to stimulate the liver and by freely taking it all the year around, by old and young alike, Chronic Constipation, Indigestion, Colds, Rheumatism, Bad Complexion and Skin Diseases can be relieved and overcome. For nursing mothers, after it is steeped, as told on each box, and for children, there is nothing better than ELLA R. BERRY'S CREOLE TEA in Herb form. A little sugar can be added to the tea and mild doses, administered from time to time, will keep them well and healthy. At all drug stores, 10 cts a box.

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To introduce "The Country Home" Department of our dollar magazine, we will send you FREE, 50 embroidery transfer patterns and book of instructions, if you send only 10c for 3 months' trial subscription. Ask for catalog showing other valuable articles you can get without cost. Send 10c, coin or stamps, today. The Country Home Dept. Box 510, St. Joseph, Mo.

GYPSY Dream Book

10c Will you be lucky in love? Contains the true explanation of all dreams and lucky numbers that belong to them, fortune telling by cards, dice, dominoes, moles, marks, scars, or other signs of the skin. Judgments drawn from the moon's age. Signs of marriage, Palmistry or fortune telling by lines in the hands. Sent postpaid upon receipt of 10c. T. CECIL CONCERN, Springfield, Ohio

Again Ahead

As usual we are ahead of the rest. Ahead in style—ahead in quality—ahead in design—ahead in price and ahead in terms. So far ahead that you will be behind the times if you do not wear one of our new, nobby suits this spring.

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Dept. 668 Chicago

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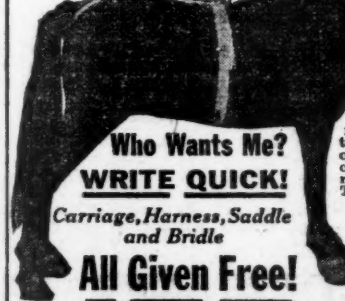
Over 675,000 sold—every Monitor sells another. Handsomest iron made, the right shape, the right size, right weight. Easy to operate. Heat regulated instantly. Every home a prospect. Men and women agents make \$5 to \$10 a day. So can you. Write for terms. Exclusive Territory. The Monitor Sd Iron Co. 446 Wayne St., Big Prairie, Ill.

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HURRY! — WHO WANTS HIM? — SEND TODAY!

Girls and Boys! Write quick and see how easy you can get a pony free. Yes, really FREE!

Who Wants Me?
WRITE QUICK!
Carriage, Harness, Saddle and Bridle
All Given Free!



If you could pick out what you would rather have than almost anything else in the world right now, I know you would say "A Pony." I want to make you a present of this real, live, beautiful Shetland Pony "BILLY" and if you try you can get him FREE, absolutely FREE. You cannot buy him because I am going to give him away. Send me your name, QUICK!

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"I want to go to some kind little girl or boy who likes a real pet and who will give me a good home. You will love me because I am friendly and gentle and like to play. I am strong, too, and you can fill up my carriage with children and I'll take you to school and home again, so fast you'll never be late. I am going free to some boy or girl, so you better send for me. See my photo. I am a black pony, four years old, weigh about 300 pounds, well trained and gentle. Just the chum you want. You can ride me or drive me. I have a dandy new Carriage, Harness and Saddle, so I am all ready for you. Tell the Pony Editor that you want "Billy."

Send Me Your Name Quick!—Free Gift
Let me tell you how you can get a dandy Shetland Pony, Carriage, Harness and Saddle—all FREE. My plan is different, it's so easy. You want a Pony and here is your chance. Write me TODAY. A post card will do. Just say "I WANT BILLY," give your name and address, and I'll send you a FREE GIFT to start, and show you how to get this beautiful Pony FREE. But you must HURRY—no delay—GET STARTED QUICK! Address

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BEAUTY OF LIFE TO SERVICE.

By Nettie Richmond.

Two years ago I had the pleasure of seeing my oldest son graduate from the high school, and again on the evening of May 22, I witnessed the graduation of my oldest daughter Mary, together with eight others. What a thrill of delight the parents and relatives feel as they view all the lovely flowers and decorations, hear the orchestra play and see the nine noble young people march in and sing a song. All the orations, music and so on were most interesting as many of you who have been witnessing a similar exercise know, and especially do we enjoy it if one of our loved ones participate in it. Of the 60 little ones who entered our school in both north and south buildings, 12 years ago our daughter and two others were the only ones of them that continued in school here until they graduated.

To my own children who have finished the public school work and to many others I will say: You may be having beautiful visions of life and life is as beautiful—far more so than you imagine, but the beauty of life is to be seen only by those who serve. Your course in school is for one purpose, to fit you for helping others. Use your intellect, your affections, your will freely for others. My dear young friends, you know not the way you are going, but I trust you know your guide

may you put your hand in God's as did Abraham of old, and ever allow Him to lead you and whatever your vocation. He will always help you through all the difficulties of life.

Our Mary expects to teach school, just as her father, mother and grandmother did in the past years.

A few weeks ago I was driving a spirited young horse in town, it wanted to run and I could not hold him, his speed increased, and I was nearing two wagons in front of me, driving slowly over a rather narrow bridge my horse plunged madly between the bridge and sidewalk and to escape a terrible ditch he jumped onto the side of the bridge, breaking away from the buggy just as I was thrown out onto some large rocks, however, no serious damage to myself, the horse or buggy and I think it was because I was praying, for when all earthly help availeth nothing, then the Lord will protect, but it was a mirical I was not killed in such a place. One has such peculiar feelings when they think every moment is their last.

Our nearest neighbor was suffering intense pain with his lower limbs for several days, a doctor was treating him for rheumatism which made him worse; at one time his heart quit beating and he was almost dead. When they sent to Springfield, Mo., for Dr. F., who found that in a runaway some 30 years before this man had dislocated a bone in his neck, two in his

back, his knee and his hip, this doctor, with his hands alone put all these bones back in place and the man is now well. This doctor carries no medicines or instrument and has never been licensed to practice medicine, but he has made the human body a great study and worked a miracle with this man here.

RHUBARB AND PINEAPPLE MARMALADE.

Rhubarb is mildly flavored and pineapple the opposite; therefore the addition of a little pineapple to a large amount of rhubarb produces an economical combination with an unusual and pleasing flavor.

Select young and tender rhubarb, wash it carefully and cut it into small pieces without peeling it. Place it in a granite preserving kettle and cover with boiling water. Select and peel firm pineapples remove the eyes and cores, and run the remainder through a meat grinder. Add the ground pineapple to the rhubarb, measure the mixture, and add half as much granulated sugar. Boil the whole until the marmalade is thick; and while it is boiling hot pour into sterilized jars and seal. If desired the juice and pulp of three oranges may be added to the marmalade just before it is done.—M. M. Haynes, Colorado Agricultural College.

SODA AND SALT IN VEGETABLES.

Vegetables with a strong flavor, like a cabbage, onions and turnips, should be cooked in a large amount of water and kept boiling rapidly. Such vegetables will improve with the addition of a bit of soda, and when the water is to be all poured off no appreciable trace of the soda remains, says the Woman's World.

But don't use soda with beans, peas, carrots or other sweet-juiced vegeta-

bles. These should be cooked in a small amount of salted water. Soda destroys the delicate green color of these vegetables, while salt intensifies it. Gently simmering these vegetables also helps them to retain their color and natural flavor. Soft water is considered better than hard for cooking vegetables. When it is used, care should be taken that it is pure. Summer vegetables should be cooked as soon after gathering as possible. Deterioration is especially noticeable in asparagus, peas and corn. When they must be kept, they should be put in a cool, well ventilated cellar or in the ice box. Lettuce keeps well if sprinkled and put between two wet cloths, either on the ice or in a cool basement.

Wilted vegetables may be freshened if allowed to soak in cold water.

Summer squash, string beans, cabbage, asparagus, cauliflower, cucumbers, beets, turnips and carrots are all improved by standing for a time in cold water.

Plain Caramels—One-half pound sugar, one-half pint milk, one and one-half ounces butter, level salt-spoonful of cream of tartar. Boil together for about 20 minutes, then remove from the fire, stir in one-half teaspoonful of essence of almonds, and a few drops of cinnamon, and run into a buttered dish. This mixture is equally nice boiled a little longer and made into sugary candy; it can also be flavored with vanilla or peppermint essence if liked.

Cheese Straws—Take two ounces of grated cheese, two ounces of fresh butter, two ounces of bread crumbs and two ounces of flour. Mix these together into a paste. Flavor the mixture with cayenne, salt, pepper and a very little mace. Roll this out rather thinly and cut into long thin fingers. Bake for a few minutes in a quick oven.

PATTERNS FOR RURAL WORLD READERS.

In ordering patterns for Waist, give bust measure only; for Skirts, give waist measure only; for children give age only; while for patterns for Aprons say, large, small or medium.

9937. Ladies' Corset Cover With Peplum. Cut in seven sizes: 32, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 2 yards of 27-inch material for a 36-inch size.

9963. Ladies' Blouse Waist. Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 2 1/4 yards of 36-inch material for a 38-inch size.

9935. Ladies' House Dress. Cut in seven sizes: 32, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 5 yards of 44-inch material for a 36-inch size. The skirt measures about 1 1/2 yards at the foot.

9950. Ladies' One-Piece Suspender Skirt with Bib Portions. Cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 3 yards of 44-inch material for a 24-inch size, which measures about 1 1/2 yard at the foot.

9949. Girl's Dress with or Without Shield.

Cut in four sizes: 6, 8, 10 and 12 years. It requires 4 yards of 40-inch material for a 10-year size.

9794. Boy's Blouse Suit with Straight Trousers.

Cut in four sizes: 4, 6, 8 and 10 years. It requires 3 1/4 yards of 44-inch material for an 8-year size.

9955. Ladies' Costume with or Without Chemisette.

Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 4 1/2 yards of 44-inch material for a 36-inch size. The skirt measures about 1 1/2 yards at the lower edge.

9810. Dress for Misses and Ladies With or Without Chemisette.

Cut in nine sizes: 14, 16, 17 and 18 years, for misses and 34, 36, 38, 40 and 42 inches bust measure for ladies. It requires 5 yards of 44-inch material for a 16-year size, and 6 yards of 44-inch material for a 38-inch size.

These patterns will be sent to RURAL WORLD subscribers for 10 cents each (silver or stamps).

If you want more than one pattern, send 10 cents for each additional pattern desired.

Fill out this coupon and send it to COLMAN'S RURAL WORLD, 716 Lucas Ave., St. Louis, Mo.:

Pattern No. Size. Years
Bust. in. Waist. in.
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FOR SALE—Rich, drained land in Southeast Missouri, direct from owners large acreage to choose from; plats and illustrated literature mailed free. E. F. Shubert, 1605 Hickory St., St. Louis.

FORCED TO SELL 320 acres, 3 miles from R. R. town, smooth, rich, good grass and crop land, joins free open range and lake, \$9.00 per acre. Write for full description, owner, S. S. Sanger, Brandon, Colo.

LIVE STOCK.

BERKSHIRES, splendid lot of pedigreed Berkshires, all ages. Pigs, \$10 each. H. H. Shepard, Pacific, Mo.

GUERNSEY BULLS for sale—Two full blood, not eligible to registry; one yearling, good, \$80; one 8 months, \$55. H. Vroman, Verona, Wis.

BIG TYPE Poland-Chinas, of the largest and most prolific breeding. Write today for what you want. Highland Stock Farm, Piggott, Ark.

BIG TYPE Poland-China pigs, sired by a son of Cooper's big Bane, 2 others by Postage Stamp, \$9.00. Priced to sell. Wm. Campbell & Son, Pinckneyville, Ill., R. D. 5.

FOR SALE—A good farm, 180 cattle, 40 sheep, registered Berkshire hogs of very best breeding; separately or together; Angora goats. W. Grey Ellis, Florence, Miss.

STALLIONS FOR SALE, 1,700 black Percheron, 1,200 bay Denmark, fine individuals; fine breeders. Should sell for \$800 or \$900. A snap at \$550 for both. Write me. J. S. Messick, Clinton, Mo.

FOR SALE—Some choice Guernseys. The premium 4-year-old bull Roy of Oakwood. Some bred heifers and an extra nice lot of male calves. W. Henry Bell & Son, Scotts Station, Ky.

POULTRY.

FOR SALE—Full-blooded Mammoth Pekin ducks. Eggs \$1.00 per setting. Mrs. A. Brower, Rinehart, Mo.

HANLEY'S FANCY PLYMOUTH ROCKS, Barred, White and Buff. Winners wherever shown. I have some of the best I ever raised, birds I could sell easily at \$50.00 each. Eggs, pullet mating, Pen 1 \$5.00 per 15; Pen 2, pullet mating, \$2.50 per 15; Pen 3, ch. mating, \$3.50 per 15; 60 per cent guaranteed fertile or duplicate the order at half price. Eggs half price after May 15. J. H. Hanly, Monticello, Mo.

SEED AND NURSERY STOCK.

SWEET CLOVER SEED—Pure white and large biennial yellow. Prices and circular sent on request. Bokhara Seed Co., Box D, Falmouth, Ky.

SPLENDID OPPORTUNITIES to representatives everywhere to sell trees and plants; experience unnecessary; liberal terms; outfit free. Cash weekly. Devote part, or all time. Write for particulars. Fayetteville Nurseries, Dept. 21, Fayetteville, Ark.

FETERITA—Pamphlet giving experience with this drouth-resisting grain and forage crop. Will mature after oats or wheat crop. Pure, high-testing re-cleaned seed \$2.75 single bu.; \$2.50 in two bu. lots; sacks free. H. M. Hill, Lafontaine, Kan., R. 1.

AGENTS.

1,000 AGENTS wanted at once, to sell the Imperial Self-heating Iron; men or women; salary or commission; \$15.00 to \$20.00 per day profits; experience unnecessary; sells at sight. Imperial Self-heating Iron Co., Memphis, Tenn.

MISCELLANEOUS.

MAGAZINES, 50c worth for 10c, postpaid, good ones, too. Emory C. Pharr, Sycamore, Ga.

WANTED—To buy 5,000 mink and foxes. \$2.00 to \$5.00 each. Beechhurst Co., Shelbyville, Ky.

SAN FRANCISCO FAIR!!! Do you want to go there next winter????? Spend a penny for full particulars. Send us a card and we will forward literature telling you how to make money in spare time. Compton Bros. Agency, Findlay, Ohio.

Horseman

Liberty Jay, 2:14 $\frac{1}{4}$, will be raced by Charles Hammond, of McCordsville, Ind., after his season in the stud is over.

George F. Finney, the popular "Eastern Shore" trainer, has taken his stable of five horses to York, Pa., for spring training.

Ned McCarr is now second trainer for Tom Murphy. He should make a valuable assistant for the Poughkeepsie wizard.

The pacer, Rex Heart, 2:14 $\frac{1}{4}$, last year purchased by Captain Shaw and found somewhat wanting when introduced to Grand Circuit company, is being named in early closing purses on the half-mile tracks.

Ed Terrell is at the Columbus, Ohio, track with Dwight Logan, 2:10 $\frac{1}{4}$, that was one of the best winners in the pacing classes on the Ohio half-mile tracks last season and which is staked on the Grand Circuit this year.

Annie Miller (dam of Argot Boy, 2:03 $\frac{1}{4}$), Mildred Directly, 2:14 $\frac{1}{4}$, and Creole Belle, 2:15 $\frac{1}{4}$, have been to the court of Searchlight, 2:03 $\frac{1}{4}$, the premier stallion at W. L. Wood's Woodland Heights Stock Farm, Liberty, Ind.

No entrance fee will be charged to the classes at Allentown Fair, Allentown, Pa., this fall. Ten per cent. will be deducted from first and second money winners and 5 per cent. from winners of third and fourth moneys.

Creosote, 2:09 $\frac{1}{4}$, is at Toronto, Ont., in the stable of John Fleming and is reported to be working well. Great things are expected of the Todd gelding this year, as he is under the new eligibility rule enabled to start in any class.

Walter Cox has made several nominations in the early closing classes of the Bay State Short Ship Circuit. The stable of the Yankee reinsman is said to be in fine shape, though the lateness of the spring is setting him worrying.

There will be seven days of racing at the Forest City Fair at Cleveland, Ohio, this fall over the famous waterproof track. Homer J. Kline, the busiest secretary in America, will see to it that everybody races, and that everybody gets a square deal.

E. H. Gaston is at Anderson, Ind., with Argot Girl, 2:14 $\frac{1}{4}$; Charley C. by Coastman, a good green pacer; a pacer by Star Hal, 2:04 $\frac{1}{4}$, that is promising and a two-year-old by Oratorio that is a good gaited fellow. Five or six more will be added to his stable in the next week or ten days.

\$2,500 SADDLE HORSE STAKE.

The saddle horse men, and all lovers of the Missouri saddler, will be delighted to hear that the directors of the state fair have decided to offer the \$2,500 saddle horse stake again this year. Last year's show was recognized over the nation as having been the biggest ever held on the continent. That is a good score for a state that now leads Kentucky for fine horses and pretty women.

DOSING THE HORSE.

Medicine may enter the system by the mouth or rectum, by inhalation through the lungs and air passages, and subcutaneously, or under the skin, by the use of the hypodermic syringe. While each of these methods has its peculiar advantage in the treatment of different diseases, the safest way for the unprofessional to give medicine to the horse is by the mouth.

For a long time the most popular form of giving medicine by the mouth was the ball or bolus, which was made by mixing the substance to be given with flour and water or some other consistent medium, but gela-

tine capsules are now obtainable which are more convenient and readily dissolved upon entering the stomach.

The ball is held by the ends of the fingers and placed as far back on the tongue as possible, the tongue being held by the other hand. As the ball is released from the fingers, the tongue is released, and the head of the animal is held a little erect for a few seconds. The whole knack in giving a ball lies in releasing the tongue immediately after the ball leaves the fingers.

Liquid medicines should be given carefully, and the liquid should be swallowed by the horse and not poured in, as is often the case. Serious results may follow the careless drenching of horses, as the liquid is liable to enter the lungs when poured into the horse in haste. Medicines used to form gases to be inhaled are too well known to need any comment, and the use of the hypodermic syringe should be left to the veterinary surgeon alone.—N. Y. Farmer.

WHERE A HORSE IS A NOVELTY.

A horse is such a commonplace object to most of us that it brings somewhat of a shock of surprise to read of the astonishment and fear caused among Indians far north in the Upper Yukon district. The horse belonged to Charles Sheldon, naturalist and hunter, who describes his explorations in the wilderness of the Upper Yukon:

"In the afternoon, shortly after seeing an old Indian and two boys on the left bank, we came to their camp, where four families were occupying tents. Never had I seen Indians in the north that were of such healthy and vigorous appearance. As I took the horse off the boat all started to run, and their dogs, which were tied near the tents, became greatly excited and struggled against their chains to attack him. None of the Indians of the upper Pelly River ever before had seen a horse."

On the next day the experience was repeated at a second camp:

"As the Vidette rounded the curve into Ross River and made fast I gazed from the deck at the multitude of Indians—men, women and children—all assembled on the bank and nervously rushing about. When the gang-plank was put out I suddenly rode Danger, the horse, to the shore and approached the Indians on a trot, while men, women and children were fleeing in all directions and shouting in fright. My progress was suddenly checked, however, for at once a dozen or more dogs rushed at the horse, howling and snapping. If the trappers had not quickly beaten them off the horse surely would have been disabled."

News of the wonderful animal was immediately carried ahead.

"Many Indians had come to our camp for the purpose of seeing the horse, which aroused intense interest among them. One morning three appeared very early and watched us throw the pack on Danger. So great was their astonishment to see him walk off with a pack of two hundred pounds that they followed us for three miles."—Our Dumb Animals.

THE HORSE, THE TRUCK AND THE STORM.

In a recent editorial published in the New York "Herald" after the big blizzard in February, the statement is made that the storm would probably prove to be the best thing possible for the horse industry, because the motor truck failed in the emergency. The "Herald" says: "Now that the worst is over, it would be interesting to know what might have happened to the big city with its four million inhabitants if it had been dependent on the abandoned automobiles which dotted the landscape for miles around."

We hold no brief for the automobile; we are devoted exclusively to the horse, but it would appear that the "Herald" published the foregoing without full knowledge of the facts, and furthermore, that if it had full knowledge of the facts and if the apparent direct statement that the automobile failed, actually should be read with the reservation that appears on

closer reading of the item, the whole article is open to suspicion.

Of course, if the city and its inhabitants had to depend upon automobiles that were abandoned, it would be in a bad way. But every resident of New York knows that there were thousands of cars and trucks that were not abandoned during the blizzard, and that were in service for 72 hours continuous work in a number of instances.

Horse delivery is ideal where distances are slight and stops numerous. The time is not even in sight when anything in the motor truck line will be able to equal horse delivery for a neighborhood grocery store, for instance. But it is cruel, heartless, altogether miserable to try to use horses for long hauls over tractionless roads.

The motor truck is far from perfect, but the average truck properly equipped with traction-giving devices is immeasurably superior to horse equipment after a great snowstorm, where the hauls are long and the loads heavy.

In the February blizzard and in the storm that week the horse did magnificent service, but the "Herald" is wrong when it intimates that the confidence of New York was misplaced when it was given to the motor truck.

Imagine the heartlessness of a man or corporation that even thought of trying to make 5-ton deliveries of 15 miles or more using horse equipment.

Trucks did it and returned for more, but we have yet to hear of anybody so foolish as to try it with horses.

In February, during the three days when there was no traction, there were numerous instances of Pierce-Arrow, Packard, Autocar, Hewitt and White trucks that were worked continuously from February 13 to 17 without let up.

Why, we ask the "Herald," was it necessary to pile the work on the truck during that storm, if other types of transfer and delivery were working?

The answer is simple enough: No sane, humane horse owner would consent to send his horses out into that storm on long heavy hauls if, by any possibility, it could be avoided. Where such work could not be avoided, the service certainly suffered. The result was to throw the extra work on the motor trucks, the proof of which can be found in the records of every large user of delivery and transfer service in New York.

Of course, some motor trucks failed. The "Herald" is undoubtedly telling the truth when it says that they dotted the landscape, but the fortunate part of the whole matter is that the vast majority of the 8,000 motor trucks in New York did not fail. More, they picked up the extra load and hauled it.—Rider and Driver.

MOULDS FATAL TO POULTRY.

By H. L. Kempster.

Mouldy litter in poultry houses and mouldy feed are the cause of a large number of deaths among poultry and particularly among chicks. These moulds taken into the body of the fowl cause a disease known as aspergillosis. The disease is as fatal as the name sounds. Our scientists have neglected to find a shorter name for the disease, but among poultrymen chicks affected with the trouble are commonly spoken of as "lungers." Many times the disease is mistaken for white diarrhoea. The Missouri College of Agriculture, in its investigation of poultry diseases, notes the following characteristic symptoms: The chick stands around in a drowsy manner and shows little desire to eat. The wings hang down, the breath is rapid and a white diarrhoea is present.

An affected chick will be found to have soft, yellow growths from the size of a pin head to that of a pea, mainly in the lungs, but sometimes in the intestines and mesentery. These growths, clogging the air passages of the lungs, are directly responsible for the death of affected birds.

In mature fowls there are two forms of the disease. The mucous membrane lining the air-sacs and tubes may be covered with a membranous formation



Saved Him \$225.00
For spavin, splint, ringbone, thornpin, for swellings, bruises, bony growths, and lameness, nothing is so effective as Kendall's Spavin Cure. It has been used for over 20 years and its efficacy is proven by the fact that it has saved thousands of horses from the slaughterhouse.
READ THIS LETTER
From E. J. Dayton, Knoxville, Tenn. Va.
"Two years ago this horse was at the point of my mare's shoulder and was so lame that I could not use him. I used Kendall's Spavin Cure according to instructions and today I have saved \$225.00 for that mare. I claim you saved practically the whole amount. I have tried it almost for everything in the animal line and have found it wonderful."
Price \$1.00 a bottle or 6 for \$5.00. Get our Book "Treatise on the Horse"—Free at druggists or write to Dr. B. J. Kendall, Keosauqua Falls, Vermont, U. S. A.

ABSORBINE
TRADE MARK REG. U. S. PAT. OFF.
Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone. Horse can be used. \$2 a bottle delivered. Describe your case for special instructions and Book 2 K Free.

ABSORBINE, JR., the antiseptic liniment for mankind. Reduces Strained, Torn Ligaments, Enlarged Glands, Veins or Muscles. Heals Cuts, Sores, Ulcers, Ailays pain. Price \$1.00 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, P. O. F., 58 Temple St., Springfield, Mass.

"SHOEING HORSES"

This book is out of print, no more copies can be issued. Those on hand are for sale at \$1.00 per copy, mailed postage paid. Book is copyrighted.

RICHARD BOYLSTON HALL, Author,
40 State Street, Room 43, Boston, Mass.

which is soft and yellowish and has an offensive odor, or the post mortem will reveal white or yellowish nodules imbedded in the tissues of the lungs.

Early symptoms are that the bird is inactive, sleepy and if forced to run, will fall from exhaustion; breathing is rapid, appetite is diminished and more or less catarrh is present.

There is no cure for the trouble, but since it is caused by eating mouldy feed or by being permitted access to mouldy litter, it can be entirely prevented by not compelling fowls to eat mouldy food and by keeping them away from mouldy litter.

This is just one of the many poultry troubles that can be entirely avoided by feeding nothing but fresh, clean feed and keeping the pens and yards free from filth and moulds.

FURNISHING FARM HELP.

Jewell Mayes, secretary of the board of agriculture, reports statewide co-operation in the matter of getting the man wanting a job into communication with the farmer needing help.

Farm advisers, agricultural club officers, secretaries of commercial clubs, station agents, merchants and farmers are invited to file requests—send requests for help or applications for jobs. Address the secretary at Columbia or the labor commissioner at Jefferson City.

Letters are coming in to the agricultural department from families in the cities who are already influenced by this new movement to return to their first love, the country, and they are now seeking employment on farms.

Missouri will need many thousand hands for harvesting the great crops of wheat, oats, rye, hay of the several kinds, following with the midsummer plowing, the filling of silos, and the gathering of what promises to be the greatest corn crop that imperial Missouri ever produced.

NEW HOME BULLETIN DUE.

The new homemakers' bulletin of the board of agriculture is in press and will be ready for mailing very soon. It covers the proceedings of the homemakers' conference of 1914 and will be welcomed in any town or country home.

MANY VALUABLE PRESENTS FREE

In the next three months we want to give away \$10,000 worth of useful and valuable presents to advertise the People's Supply Company. We want at least one person in every town to have one or more of these splendid presents, and we want the good friends and readers of Colman's Rural World to be the first to have their choice. These presents consist of Watches, Rings, Fountain Pens, Locket, Cameras, Suits, etc. Look over the list and carefully read the description of each and see what you prefer. We only have room to show you a few of the many presents you may select from.

Our offer makes it so easy to get one or more of these useful presents that every boy or girl, man or woman reader of Colman's Rural World should sign the coupon below. All we want you to do is distribute 20 of our swell Art and Religious pictures amongst your friends and neighbors at 10 cents each. These beautiful pictures are 12x16 inches in size, and lithographed in many beautiful colors. Nearly everybody you show these pictures to will thank you for the opportunity of getting one or more at 10 cents each. As soon as you have distributed the 20 pictures, send us the \$2.00 you will have collected and we will send you your choice of any one of the presents you select from our big list of premiums.



BRACELET AND RING FREE

BRACELET AND RING

Adjustable to any size wrist and gold plated throughout, and the fancy engraved links alternating with plain polished ones produce a very pleasing effect. Ornamented with elaborate, fine cut, sparkling ruby stone, set in richly chased border. Three-stone gold plated ring given with each bracelet.

Don't send any money. Just fill out the coupon below and mail it to us, and we will send you, by mail, all charges prepaid, the 20 beautiful pictures.

You run no risk as we take back any you do not sell, and send you a present for what you have sold. Fill out the coupon below and mail it today. The coupon starts everything.

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716 Lucas Ave., - - St. Louis, Mo.

NOTICE!

We give you an extra gift of 40 Beautiful Post Cards; no two alike, for being prompt. Our plan is full of pleasant surprises.



Ladies' or Gentleman's Watch

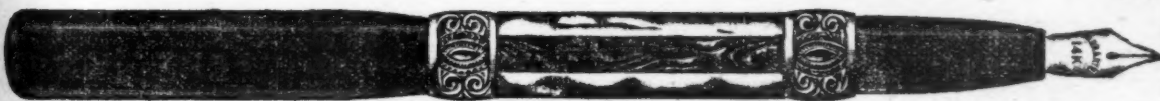
A picture (reverse side reproduced) of our American made late model Watch.

American Model, stem-wind and stem set, suitable for a lady, gentleman, boy or girl. Case is embossed with a beautiful and chaste design, and presents a rich and elegant appearance. Attractive easy reading dial, with hour, minute and second hands, and is dust proof.



Gold Filled Ring Set With Three Brilliant Stones

PEARL FOUNTAIN PEN

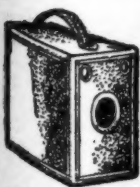


The barrel is a genuine guaranteed hard rubber; cap is of the same material. The barrel is inlaid with mother of pearl decorations and you can see the beautiful design from the illustration. The inlaid work is held in place by two fancy gold plate bands; pen point is guaranteed 14K solid gold, and in every respect this fountain pen is first class.

Locket, Chain and Ring

Hand engraved. Crescent design set with eight extra quality brilliant white stones. Locket is suspended from a 22-inch chain, and will hold two pictures. With each locket and chain we also will give an extra gift of one gold-filled ring set with 3 brilliants.

Camera Outfit



This Camera outfit includes camera with automatic shutter, plates, developing tank, developer and fixer and full instructions. Will take clear and sharp pictures. Covered with moroccoette.

Vanity Case

Made of rich German Silver which has an extra finish, and is decorated with fancy flower border. This case has a mirror of good quality, and powder puff compartment and places for quarters, dimes and nickels, also a strong catch that will hold cards and bills. Attached to this Vanity Case is a ten-inch chain. Size of case is 4 1/2 x 2 1/2.



BOYS! GET THIS RIFLE FREE!



Will Shoot 350 Times

AUTOMATIC REPEATER
Works Like a WINCHESTER

Without Reloading

Boys—here is the Air Rifle you have always wanted—a real repeater that loads automatically just like a Winchester or a Marlin. Nearly 3 feet long, yet weighs only 2 pounds. Uses B B shot and shoots 350 times without reloading. Will kill, at long range, crows, hawks, and parts made of high-grade steel, handsomely nickel plated; stock of finely-polished black walnut. This splendid Rifle is just what you need for target practice. No powder—no danger—yet it will shoot almost as hard and as far as a regular .22 caliber cartridge rifle. It is the safest and most powerful air rifle ever invented.

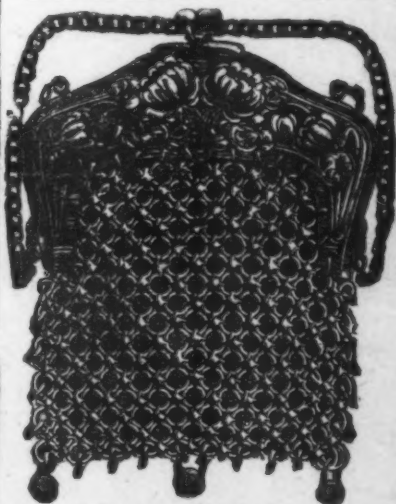
Handbag

Made of seal grain with gusseted ends welted, heavy cloth lining, fitted with pockets for mirror, bottle, coin purse, etc. Bag measures 10 1/2 x 8 1/4 inches and is fitted with fancy French gray silver finished frame, has a double strap handle.



CASH COMMISSION

Many of our agents prefer to sell our goods for a cash commission instead of a premium. We allow 40 per cent commission to agents who desire the money instead of the premium. In other words, you keep 80 cents out of every two dollars' worth of goods you sell, and send us the remaining \$1.20. If you find you cannot sell all our goods you will be entitled to a commission on the full amount you do sell.



Mesh Bag

Made of German silver, beautiful oxidized frame, prettily embossed with a handsome floral design. The size of the bag is 3 1/2 x 2 1/2, which makes it neither bulky or too small. Attached to it is a ten-inch chain.

SEND NO MONEY—JUST YOUR NAME.

People's Supply Co.,
716-718 Lucas Ave., St. Louis, Mo.

Gentlemen:—Send me 20 packages of your high-grade art and religious pictures, which I promise to try and sell for one of your presents. I promise to return all pictures I cannot sell.

Name

R. F. D. Box Street

Post Office State

3½ Foot Telescope ALMOST FREE

THERE are a thousand uses for this instrument in every home and on every farm or ranch. You can see what your neighbors are doing who live miles away from you. It will bring the remotest part of your farm to your door. You can tell who is in a carriage long before they reach you. You can view and count stock on distant parts of your farm or ranch.



POSITIVELY such a good telescope was never offered in such a liberal manner before. These telescopes are made by one of the largest manufacturers of Europe; measure closed, 12 inches, and open over 3½ feet in five sections. They are brass bound, brass safety cap on each end to exclude dust, etc., with powerful lenses, scientifically ground and adjusted. Guaranteed by the maker. Everyone living in the country should have one of these instruments. Objects miles away are brought to view with astonishing clearness.

Used as a microscope it is found of infinite value in discovering microbes and germs in plants, and seeds, etc.

Heretofore telescopes of this size with solar eyepiece and multi-focal lenses, have sold for \$8 to \$10, or even more. We do not claim our telescope is as nice and expensive in every particular of construction as a \$10 telescope should be; that would be unreasonable; but it is a positive wonder for the price. Each telescope is provided with 2 interchangeable objective lenses—one for ordinary range and hazy atmosphere, the other for extra long range in clear atmosphere, increasing the power and utility of Telescope about 50 per cent.

Can Count Cattle Nearly 20 Miles Away.

F. S. Patton, Kansas, says: "Can count cattle nearly 20 miles away. Can see large ranch 17 miles east, and can tell colors and count windows in the house."

Saw an Eclipse of Sun.

L. S. Henry, The Saxon, New York, writes: "Your Solar eyepiece is a great thing, I witnessed the eclipse at the Austrian Tyrol when the sun was almost 80 per cent concealed."

Could See Sun Spots.

Rutland, Vt., Feb. 16, 1910.—Telescope arrived O. K. I have seen the spots on the sun for the first time in my life.—Dan C. Safford.

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Send us \$1.00 to pay for a one year extension on your subscription to our big farm paper Colman's Rural World and 35 cents extra to help pay mailing and packing charges on the complete telescope outfit, which will be sent postpaid (total amount to remit, \$1.35). Absolute guarantee of satisfaction or money refunded.

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718 Lucas Ave., St. Louis, Mo.

Gentlemen:—Enclosed find \$1.35 for which you may extend my subscription one year to your big farm paper, Colman's Rural World and send me one of your telescopes as advertised. Telescope to be as represented in your advertisement, both as to size and quality.

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From Producer To Consumer

BUYING DIRECT.

Editor Rural World: The Farmers' Equity Union has a fine line of farm machinery; contracts made direct with factory. If you would like to trade at home and save the dealers' profit, write. Also binder twine and direct connection with Mississippi valley produce. Also coal, flour and feed. Direct from farm, factory mine and mill is the equity way. Would you like connection? VIRGIL I. WIRT.
Virden, Ills.

WOODS PRAISES THE MIDDLEMEN.

The middleman of recent years made the buffet of the primary producer and the consumer and criticised as an economic grasping, who extorts more than he gives, was praised as a money-saver and economic necessity by Secretary of State Harry Woods before the Illinois Grain Dealers' Association here.

"It would be as logical for the farmer to take out his telephone over which you quote him the market, on the grounds of economy, or go back to the ox team as a time saver," as it would be to dispense with the Chicago Board of Trade.

Mr. Woods said:

"A central market is a part of the world's economy. In primitive days, when the cultivation of the soil was the chief occupation of our people, the exchange of surplus produce consumed much time, and as a natural consequence and a means of economy, the cross-road corner became a meeting place and the blacksmith shop and general store developed. These central locations saved half of the journey and the effect was the same as increased productions.

"From the corner store to the village, and finally to the city, was but the natural evolution in business, based upon that selfish motive, the foundation of the law of wages, that labor endeavors to satisfy its desires by the least exertion. As the size of the central market developed, trade became more complicated, until today, each state has its many markets, but these lesser markets look to that general market which handles the great bulk of the trade in any particular commodity.

"Chicago is today recognized as the grain and provision market of the world. That I have had to do with that market for many years of my life, is incidental, yet the fact places me in a position to state that its membership is made up of as honorable a body of men as I have ever known. Without honor in this central market, the Chicago Board of Trade would be but a gambling institution. Without stability and individual integrity, banks would become lotteries.

You may say that this central market would be dispensed with, and I am not here to dispute this fact. The grain dealers here represented could be dispensed with in their several local markets all over this state, but not dispensed with as a matter of economy. It would be as logical for the farmer to take out his telephone over which you quote him the market, on the grounds of economy, or to go back to the ox team as a time saver.

Chicago Markets Aid Farmer.

When Mr. Farmer has a load of corn to dispose of, he calls up his local dealer, who quotes him the market based upon Chicago prices. Without this great market upon which to depend, a lesser price would have to be paid the farmer to make up for the greater risk the dealer would have to take. In other words, rate of interest is based upon risk. Gilt edge security carries a lesser interest than the more hazardous.

Future trading gilt edges quotations. If the farmer has 1,000 bushels of oats to sell, which he can deliver inside of 30 days, the dealer can sell against these oats in Chicago market, for a stated future delivery, and by so doing, protect himself against loss. The same is true of a cattle feeder or a large consumer of grain or provisions. Purchases can be made for future de-

livery, so that the produce can be had when needed.

This method is natural, as well as economical. It would be possible for a market to exist, based upon cash trade only, but would it be profitable? The volume of trade would shrink to such an extent as to represent only the actual seller and actual buyer. The actual buyer is usually the consumer in large quantities. The actual sellers represent the many smaller producers. More than this, the producer must market his produce as he needs the money. The large consumer can wait for a market to buy on. "A glutted market makes provisions cheap." An exclusive cash market would result in a smaller market, and concentrated buyers.

"It is true, that what has been termed big business, was represented on the board of trade, and through a system of railroad rebates, gave the advantage to the elevator interests, by aid of which they could outbid all others and have great influence on the cash market and much upon the futures.

"Rebates are not only unjust, but they ignore ability as well, and the incentive to become an expert is lost, because business reward is destroyed, when we remember that this advantage from the railroad had for its foundation, and was drawn from, the railroad right of way advantage. For it is the privilege, granted by government (the right of way advantage) which grows as population increases, and that increases the earning power of the road. The interest in the actual capital invested, and the running expenses of the road are totally different things, and could not survive rebate drafts upon them.

"After the discontinuing of the rebate system, the elevators still have an advantage, by the direct contact with each grain and elevator charges. The Chicago Board of Trade is endeavoring in every way to assist the governmental policy of equal opportunity for all, and are proposing an amendment to make grain in cars deliverable on contract for future delivery, the last three days of the month. The rule will also provide diversion by buyers before grain is unloaded, if he wants it for shipment by rail, thus saving the elevator charge of 1 cent per bushel.

"Everything is tending toward democracy—I do not mean in a party sense, but to a democracy where none shall have a governmental advantage over another, where ability and integrity will be recognized—a nation of each for all, and all for each, and not every one for himself, and the devil take the hindmost."

"We have grown great commercially, but the distribution of the wealth which we have created could have been much more just. Many, through governmental favoritism, have amassed fortunes beyond the miser's dream, while thousands of our people struggle hard for a bare existence.

"I am no pessimist, but an optimist. Tomorrow's sun will rise on a brighter day. Our trouble is largely political. In our struggle for advancement we have endeavored to improve upon the work of our forefathers, which Gladstone, the brightest mind that Europe has produced, said was without a flaw—that immortal document which declared: 'We hold these truths to be

self evident, that all men are created equal; that they are endowed by their Creator with certain unalienable right; that among these are life, liberty, and the pursuit of happiness.' We have but to return to this inspired source for our future guidance. And to those who have thoughtlessly reaped where they have not sown, we will say: 'Neither do I condemn you; go and sin no more.'"

CLAYTON BILL TO LEGALIZE UNIONS.

Trade unions and farmers' unions would be specifically legalized in their existence and declared not to be combinations in restraint of trade by a paragraph which the house just incorporated in the Clayton bill to supplement the anti-trust laws.

Although it is designed only to clarify existing law, organized labor leaders say the final passage of this amendment will mark the culmination of a fight waged by them for 14 years since the passage of the Sherman anti-trust law—for exemption from prosecution under the laws against monopolies and restraint of trade. On a vote to perfect the labor provision the house was recorded 207 for and none against it. As adopted, the provision declares that "nothing in the anti-trust law shall be construed to forbid the existence or operations of labor unions or farmers' co-operative associations, or to forbid or restrain members of such organizations from 'carrying out the legitimate objects thereof.'"

Supplemental to this provision the house adopted an amendment proposed by Representative Webb in charge of the bill and agreed on by organized labor representatives and the administration, which would provide that such organizations and their members shall not be "held or construed to be illegal combinations or conspiracies in restraint of trade under the anti-trust laws."

Although the provision was passed without a dissenting vote, there was considerable debate as to just what the effect of the legislation would be. The democratic leaders declared that the provision would give labor the exemption it desired and asserted that officials of organized labor had endorsed the phraseology. Progressive Leader Murdock and others asserted that it would be years before the courts could finally define just how far the exemption went and what it meant.

A clause to legalize such conferences and agreements among railroads as are now subject to the control of the interstate commerce commission also was passed by the house. The section confirms and protects the jurisdiction of the commission over such agreements and confirms existing laws against joint agreements to maintain rates.

THE MIDDLEMAN.

When the recent agitation about the high cost of living was in sway, the middle man came in for a good deal of blame. And it is little wonder that he should have been blamed when such conditions as the following were constantly being discovered in all parts of the country. Extra fancy Jonathan apples from Wenatche Valley,

FARMERS EQUITY UNION COAL

Blackbrier—Highgrade
Cantine—Semi-Highgrade

From our Illinois mines—Now used by many branches of the Farmers' Equity Union in the different States.

Reference: Mr. C. O. Drayton, National President Farmers' Equity Union. For prices, freight rates and any desired information, write to us.

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ENGINEER SPECIAL

To advertise our business, make new friends and introduce our line of wonderful watch bargains, we will send you by insured Parcel Post C. O. D. this genuine 1 ruby jeweled Engineer watch, regulation Railroad size, timed, tested and regulated. Fitted with solid silver case, best case and movement guaranteed 20 years, worth \$15.00 to anyone who requires an absolutely accurate time-keeper. Send correct post office address and pay postmaster \$3.95 when you receive the watch. SATISFACTION GUARANTEED or money refunded. HUNTER WATCH CO., DEPT. 12—D CHICAGO, ILL.

Washington, sold at their local shipping point at \$1.45 per box. They retailed in Chicago for \$8 per box, a difference of \$6.55. Of this amount, only 60 cents was required to get the apples to Chicago. Of the remaining \$5.95, \$2.45 went to the wholesaler and \$3.50 to the retailer, both of whom got a larger toll than the producer.

In Montgomery county, Pennsylvania, dairy men received 3½ cents per quart for milk for which the Philadelphia consumer paid 8 cents, the cost of freight to Philadelphia was ¾c, leaving the retailer a difference of over 4 cents. In other words, it was costing more to get the milk to the consumer than it cost to produce it. In Indianapolis, the middlemen combined one year when there was an abundant apple crop, and kept up the retail price for apples. The farmers had plenty of apples to sell, but the middle men refused to buy more than just what they needed. This cut the demand and lowered the price the farmer received for his product without benefiting the consumer. There were plenty of people in the city who wanted apples, and plenty of farmers in the country who had apples rotting on their hands, that they would have been willing to dispose of at almost any price, but the only means of connection between the two was through the middle men, who preferred to rob both, rather than cut the profit.

Such conditions ought not to exist. The function of the middle man is to save time for both consumer and producer by furnishing a steady market. This should give the farmer more time for production and be a convenience to the consumer.

One of the best preventions of unfair combinations is a city market where the producer may bring his wares and where the consumer knows he can supply his wants. This does away with the middle man's profits and tends to keep up the price paid to the producer of those articles that are

sold to the middle man, and tends to lower the price he can charge the consumer, and all this at the expense of the middle man's profit.—Alfred Westfall, Colorado Agricultural College.

EFFICIENCY ON THE FARM.

One of the most frequent sources of loss on the farm is an insufficient return from work horses.

Have you satisfied yourself on the following points?

Do your horses earn enough to pay for their feed and care, and enough to meet the interest, depreciation, and other expenses, as harness costs and shoeing?

It costs \$100 annually to keep the average horse, in Minnesota; but this horse works only a little more than three hours each working day. This makes the horse labor cost approximately 10 cents an hour.

Do you handle the horse labor on your farm so that the annual cost of keeping your horses is less than the average or so that the number of hours worked is greater? Both methods will reduce the cost of horse labor, but the latter offers by far the greatest opportunity.

Can you revise your cropping system so that fewer work horses will be needed, or so that the work will be more equally distributed and thus make it possible to employ them more hours each year?

Can you raise colts and thus reduce the cost of keeping your horses?

Can you arrange to use your work horses for outside work when not busy on the farm?

Can you reduce the cost of keeping each horse by feeding less feed or cheaper feed and still give a proper ration?

Farm work done with fewer horses means a saving of \$100 a year for each horse not needed.—A. H. Benton, Assistant Agriculturist, University Farm, St. Paul.



A PROMISING CROP

MISSOURI CROP REPORT.

The following report, showing Missouri crop conditions on June 1, was issued today from the office of the secretary of the State Board of Agriculture:

Unfavorable weather conditions prevailing throughout much of the month of May have lowered the crop outlook. Furthermore, a deluge of pests attacking practically every growing crop makes it impossible to forecast results with any degree of accuracy. Great destruction has been wrought by the Hessian fly and army worm. There is also some little complaint of the green bug. So far, the chinch bug has appeared in but a few localities. With ample rainfall at once the prospect would be materially changed for the better. At this time practically every section of the state, except the southeastern group of counties, less than a dozen counties in the extreme southwestern section and a few North Missouri counties that have been favored by local rains, are suffering for moisture. At Columbia the rainfall for the month of May was but 1.37 inches, as compared with normal precipitation of 4.86 inches. The lowest temperature for the month was 40 on the 9th and the highest 91 on the 26th.

WHEAT—During May the condition of Missouri wheat fell from 101.8 to 82.6, a loss of 19.2 points for the month. Most of this loss is due to the work of the Hessian fly, which has been unusually destructive in the best wheat counties bordering the Missouri and Mississippi rivers. Dry weather, army worms, the green bug and in a few instances chinch bugs, have also damaged wheat. In the counties of Franklin, Gasconade, St. Louis, Marion, Lincoln, Montgomery, Pike, Osage, Saline, Carroll, Lafayette, Livingston and Ray, which last year produced 14,238,000 bushels of wheat, correspondents report 36 per cent of the crop injured by Hessian fly, and estimate that the wheat yield was lowered 28 per cent during the month of May. Nor is the work of the fly confined to these counties. It is estimated that 18 per cent of the acreage has been worked on by this wheat pest, and that this and other combined agencies have lowered the crop outlook in practically the same proportion. This would indicate a loss of more than 8,000,000 bushels over the May 1 estimate. Preliminary figures indicate that 8 per cent of the crop seeded last fall will not be harvested in the usual way. Some of this is being pastured, while other fields have been plowed and planted to corn. While wheat condition is very much lower than one month ago, it is yet above the 5-year average of 76.6. On June 1, 1912, the condition of Missouri wheat was but 64.2. The yield that year was 21,564,000, an average of 12.6 bushels. In 1902, when Missouri grew 61,045,000 bushels of wheat from 3,166,900 acres, an average of 19.3 bushels per acre, June 1 condition of wheat was less than 10 points higher than at present. The original seeding for the 1914 crop was 2,156,637 acres. Present condition by sections shows: Northeast, 80; northwest, 74; central, 82; southwest, 92; southeast, 85. Harvest will be about ten days earlier than usual. It will start in the southern tier of counties next week. There is little or no demand for harvest help from outside the state.

CORN—Correspondents report 93 per cent of the corn crop planted. By sections, planting shows: Northeast, 93; northwest, 98; central, 95; southwest, 93; southeast, 66. This is better than the 5-year average of 87 per cent, but a considerable acreage will be to plant over, owing to the ravages of the army worm which has totally destroyed many fields. The stand, compared with normal, is 98 per cent—a gratifying surprise as there was much fear of poor seed. The condition of the growing plant is 85. This is 5 points better than the 5-year June 1 average. Soil condition is 85. Fields are free of weeds, have been well cultivated, and with sufficient rainfall from this date there is hope of a great crop. The acreage will be practically the same

as last year, or slightly more than 7,500,000 acres.

OATS—There is no chance for a good oat crop, dry weather having already done its work. Much oats will be too short to cut with binders. Some of this is being pastured or will be cut for hay. The condition of the oat crop for the state is 63, with section average as follows: Northeast, 61; northwest, 66; central, 61; southwest, 85; southeast, 55. The acreage seeded to oats was about 10 per cent greater than last year.

OTHER CROPS—Meadows, especially timothy, have suffered most, both from weather and army worms, as well as weeds. Prospects for a hay crop are exceedingly poor. Early reports were to the effect that the drouth of last year was especially noticeable in the large number of weeds that had appeared in meadows. This month come general complaints of the work of the army worm in these same meadows. The condition of timothy for the state is 58. Clover has suffered a little less, the condition of this crop being 63. Many meadows have been cut earlier than would otherwise have been in order to save the hay in advance of the coming of the army worm. In the dryer sections of the state practically all new timothy and clover is dead. Alfalfa shows a condition of 87 per cent, the early cuttings being better than usual. Condition of rye is 88. Barley, 80. Pastures which earlier gave such splendid promises of plenty, have been practically destroyed over much of the state. Even where the army worms have not stripped the bluegrass and other grasses, dry weather has done much damage. In a few counties live stock is being shipped out owing to the shortage of grass. The tobacco acreage bids fair to be about the same as last year, but may exceed it. The acreage of cotton will be slightly more than for 1913, with flax about the same as last year. The Irish potato acreage is very much more than 1913. Prospects up to this time are good, but there is some complaint of crop being cut short by dry weather.

LIVE STOCK—Live stock is generally in good health. There is now less hog cholera than has been reported during the last two years. March 1 showed a decided improvement over one year before and June 1 shows a further decrease in the prevalence of the disease. The average wool clip is placed at 7.1 pounds with 19¢ cents as the average price per pound for wool. Farmers generally report good success with young stock of all kinds.

FRUIT—The outlook for an apple crop is placed at 67 per cent, with berries at 72 per cent and peaches at 64 per cent. The peach crop is well distributed throughout the state.

VALLEY VIEW NOTES.

Editor Rural World:—Valley View is still on the map, but in these strenuous days it is hard to find time to let it be known. May was unusually dry except in a few favored localities where there were some heavy local showers. We are needing rain badly at present. Have had several days of high wind. Corn is doing well, but oats and grass need more moisture. Oats will be a fair crop, but the straw will be short. Blue grass and orchard grass have made an uncommon good growth. Our blue grass seed stripper has been in demand to save some of the abundant seed crop. Have not had time to use it ourselves, as corn plowing and alfalfa cutting has had our undivided attention. We have a fine stand of corn, about 98 per cent, and the ground is in good shape, half is on fall broken sod. Cut worms did not bother much for a wonder, but the army worms are working overtime in some places. One man not far away lost 60 acres of fine wheat, while another had his farm cleaned of everything—wheat, oats, corn, meadows and pastures. Many are planting their corn over. They are not numerous enough on this place to do serious damage so far, but are at work on the timothy meadows some. All old meadows are very weedy, and new ones will be short. Wheat is a record crop, and will be ready to cut in 10 days. We put six large loads

RUPTURED ONCE, NOW HE CAN "SWING" FAST TRAINS

Railroad Conductor Tells How His Health and Position Were Saved By Wonderful Invention.

G. W. Hardesty of 2145 Park avenue, Indianapolis, Ind., has been a conductor on the Big Four railroad for more than thirty years.

For many years he was a victim of a troublesome rupture.

As time progressed his rupture became more pronounced.

The demands of his work, "swinging" fast trains, hurrying about for train orders and the like, proved very trying. He felt at last that he would have to give up his position.

Mr. Hardesty tried all kinds of rupture devices. Truss after truss failed.

Finally he tried the Schuiling Rupture Lock and found his troubles ended. Mr. Hardesty has told his experience himself in a letter to the Schuiling Rupture Institute, in which he says:

Statement of Tribute.

"This is my unsolicited statement as a grateful tribute to the Schuiling Rupture Lock. I had come to the conclusion that there was never anything invented that could hold my rupture, but I found that the Schuiling Rupture Lock was the very thing I had been looking for all these years. Thanks to this lock, I am getting better every day and now enjoy full comfort in my work. It is the article every ruptured person should have."

Mr. Hardesty's experience certainly ought to be proof to any one of the safety and efficiency of the Schuiling Rupture Lock. Any man, woman or child can get just such relief and restoration by the use of this lock.

This is the most important invention since the treatment of rupture began. Rupture sufferers have been robbed for years by makers of trusses and worthless devices made only to sell. The Schuiling Rupture Lock is made to wear.

This announcement brings you honest assurance that you can get re-

of fine hay in the barn from a five-acre field of alfalfa. Are cutting our five acres of fall seeding today, June 8. Part of it is fine, but part was smothered out by a sleet storm in March. Sowed more seed on this spring. It made a good catch, and will have a good stand next year. A field sowed on a neighboring farm a year ago this spring made a fine crop this year. Am inclined to believe spring sowing is best for this locality.

W. A. STEVENS.

MARIONVILLE, MO., NOTES.

Editor Rural World: I have been taking quite a lay-off. I wrote a long article to the home circle department a long time ago, but it got misplaced, and I never could find it. I will write now and let you know how we are getting along down here in the southeast corner of Lawrence county, Missouri. We are having a two weeks' drouth, which is very hard on our young clover, as most of our clover is sowed with wheat, rye and oats. Should this drouth continue ten days longer, we will lose much of our clover. Wheat, rye and oats are an average crop in this section. Corn is looking fairly good, but small for this season of the year. We have had too much wet and cool weather in April and May for crops to grow, but we had warm growing weather for the past 10 days. We are much in need of rain. The strawberry crop is harvested, had a light crop, but fair grade. Crop averaged around \$2.50 per crate. We will have a full apple crop of most varieties, full crop of seedling peaches, but Elbertas are light. All garden vegetable crops are good. With a good season we will have a good corn crop. Most of our farmers are realizing the good results from level and shallow cultivation, but a number will not submit after they are convinced. Most of our wheat will be ready to harvest by the 10th of June. There were more rye sown last fall than was ever known in this section in one season. Farmers are realizing the clear profits they



lief. The Schuiling Rupture Lock will cure rupture. You can put it on and throw your old trusses away. The Schuiling Lock has been proven by the results that have stood for years. People in all kinds of work, from "rough riders" to desk men, attest its merit.

One Month's Trial Free.

The Schuiling Rupture Lock will be sent to any rupture sufferer for free trial for 30 days. That shows our confidence in it. It is simple and easy to wear. It has no unsanitary steel springs, stays, elastics, leg bands or complicated and dangerous attachments. It is a perfected device.

Our free book on rupture will interest you and explain in detail the workings of the Schuiling Rupture Lock. Send for the book now. Just write a letter or postal asking for the book, giving your name and address clearly—or fill out and send to us the blank form here:

Schuiling Rupture Institute,
170 W. Market St., Indianapolis, Ind.

Send me your free book, "How to Cure Rupture."

Name

City

State

are getting out of the rye pastures in fall, winter and early spring. The army worms are doing much damage eight miles east of here. They have stripped the wheat of its foliage, cleaned up pastures and meadows and cornfields. When they strike an orchard they bore into the young fruit and eat the inside out and leave the hull. Most all of our sheep men who are Republicans are selling off all their sheep—afraid of free trade. I am glad I am not a Republican. There is good money in sheep. I presume if I was a Republican I would sell my sheep too. Last year I got 19½ cents per pound and this spring got 21½ cents. Inside of a week after I sold, wool advanced 2 cents. If this is the result of free trade, wish we could have had free trade long time ago. After Wilson was elected one staunch Republican went to town to purchase a mush pot; said he would have to live on mush the remainder of his days. I presume he got his pot and is living on Democratic administration mush, for I never saw him look better. He is as fat as a pig. Mush is a good healthy diet. We should be thankful if we could have mush at each meal.—E. N. Hendrix, Farm Student and Information Seeker.

FOR ALFALFA AND SILOS.

"Alfalfa and a Silo on Every Farm" is a motto proposed by the secretary of the state board of agriculture for every county. What do you say—is it a good way—will it pay?

"COWPEAS AND SOYBEANS" NEXT.

A bulletin on "Cowpeas and Soybeans" is now in press and will be issued by the Missouri State Board of Agriculture within a month. Its publication at this time will be of great value to the farmers of every county in Missouri this year.

Joe McGuire is working 18 head at Denver, including nine head of youngsters for J. M. Herberf.